



**HARGRAVE**

**THE CINCINNATI  
TOOL COMPANY**

**CATALOG No. 39-B**

THE HENRY WATKE COMPANY  
MILL SUPPLIES AND EQUIPMENT  
407 UNION ST., 408 WATER ST.  
TEL. 2511 - NORFOLK, VA.

**CINCINNATI, OHIO, U. S. A.**



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**NOTE:** Prices shown in this catalog are list. Most of them are subject to discount. Discounts gladly furnished upon request.



# FOREWORD

## • • • FACTS TO REMEMBER

**F**OR more than 60 years The Cincinnati Tool Company has manufactured mechanics' hand tools.

The trade-mark,  **HARGRAVE**, on Clamps, Chisels, Punches, Star Drills, Washer Cutters and the various other tools which we manufacture, marks the highest standards of design, material and workmanship.

Our sales policy is to sell to the Wholesale Hardware and Mill Supply houses in stock quantities. This policy results in the lowest possible cost to the consumer for our products. It also enables us to give splendid service.

Our selling terms are always based on delivering goods f.o.b. cars, our factory. We make no secret rebates or preferential prices.

Sales helps are part of our service. Jobbers may have copies of these catalog pages of standard catalog size, also attractive descriptive matter, for distribution, of items which they carry in stock. We furnish electros of usual sizes upon request. Our salesmen are ready to aid jobbers' salesmen on difficult sales where specialized experience will help.

Cooperation is a very elastic term. We practice it by trying to increase our business thru our good wholesale customers. We ask in return that distributors justify our confidence by carrying a reasonable stock—drop shipments must be made at times, but don't overdo it. Goods are packaged to suit average minimum stock. An extra charge is made for broken packages. Our stock enables us to ship most orders within one day from receipt.

All our materials and finished goods are carefully tested and inspected. (See pages 4, 8 and 21.) If goods fail in service, we wish to learn the cause of the failure, and if we are to blame for it, we make replacement. Please do not return goods to us without our permission.

Shipping facilities here are excellent. We are located in Norwood, a suburb of Cincinnati, with our switch on the Pennsylvania R. R. lines. We are near the Baltimore and Ohio R. R. and the Norfolk and Western R. R. Also in reach of New York Central R. R. lines, Chesapeake and Ohio R. R., Southern R. R., Louisville & Nashville R. R., Erie R. R., and a variety of motor truck lines. A barge line with frequent sailings from Cincinnati delivers at low cost to points on the Ohio and Mississippi Rivers, and connects with steamship lines at New Orleans, affording low freight rates to the Gulf Coast, Pacific Coast and foreign ports.



*Prices shown in this catalog are list. Most of them are subject to discount. Discounts gladly furnished upon request.*



**HARGRAVE**

## Junior Clamps

Strong Malleable Frames and Steel Screws

USED EXTENSIVELY IN MANY INDUSTRIES and on NUMEROUS JOBS IN THE HOME WORKSHOP. Especially adaptable to jig and pattern work, light gluing, airplane work and assembling for riveting and welding.

### With Patented "Speed Grip" Thumb Nut Combining Speed and Power

(Shipment from factory in full packages only)



No. 557—List, doz., \$1.80  
1-in. opening, ½-in. deep



No. 570—List, doz., \$2.80  
1½-in. opening, 1¼-in. deep



No. 548—List, doz., \$3.60  
2-in. opening, 1¼-in. deep



No. 555—List, doz., \$6.30  
1½-in. opening, 3¼-in. deep

Quickest Adjusting Small "C" Clamps. The knurling permits the operator to quickly twirl the screw to position and the flat wing enables him to apply ample pressure without having to reach for a pair of pliers each time.

### With Sliding Pin (Vise Type) Handle

(Shipment from factory in full packages only)



No. 558—List, doz., \$2.40  
1-in. opening, 1½-in. deep



No. 571—List, doz., \$3.00  
1½-in. opening, 1½-in. deep



No. 572—List, doz., \$6.30  
2½-in. opening, 2½-in. deep



No. 549—List, doz., \$3.60  
2-in. opening, 1¼-in. deep



No. 550—List, doz., \$4.50  
3-in. opening, 1¼-in. deep



No. 556—List, doz., \$9.00  
2½-in. opening, 4½-in. deep



No. 551—List, doz., \$7.20  
4-in. opening, 1½-in. deep



No. 552—List, doz., \$9.90  
6-in. opening, 1½-in. deep

New  
List  
Prices  
Nos.  
558  
571  
551  
552

With "Speed Grip"					With Sliding Pin (Vise Type) Handle							
Number	557	570	548	555	558	571	549	550	551	552	572	556
Opening, in.	1	1½	2	1½	1	1½	2	3	4	6	2½	2½
Depth, in.	½	1½	1¼	3½	1½	1½	1¼	1¾	1¾	1¾	2½	4½
List, dozen	\$1.80	\$2.80	\$3.60	\$6.30	\$2.40	\$3.00	\$3.60	\$4.50	\$7.20	\$9.90	\$6.30	\$9.00
Quantity in box, doz.	1	1	½	½	1	1	½	½	½	½	½	½
Weight of box, lbs.	1	2¼	2	3¼	1¾	2½	2	3	5¼	8	4	8

Please order in PACKAGE quantities



## Small "C" Clamps

### Nos. 566-568—Strong Malleable Frames and Steel Screws

Used extensively in **Aircraft** and many other industrial plants. With flat Wing and Riveted Button Tip. Natural Finish.

Opening, inches.....	1 1/4
Depth, inches.....	1 1/4
No. 566—List, dozen.....	\$3.00



New  
Item

Weight, dozen, 2 1/2 lbs. Packed in bulk.



Opening, inches.....	2 1/2
Depth, inches.....	2 1/2
No. 568—List, dozen.....	\$5.40

Weight, dozen, 9 1/4 lbs. Packed in bulk.

New  
Item

### No. 560—Quilt Frame Clamp

The steel frame is finished in black enamel and screw is plated; pleasing appearance and quick sale. Although low in price, do not confuse this with the cast-iron clamps on the market. *This clamp is all steel.*

Opening, inches.....	3
Depth, inches.....	1 3/8
No. 560—List, gross.....	\$36.00



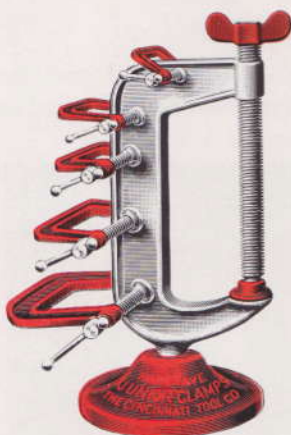
New  
List  
Price

1 dozen in a box; weight, 5 1/2 lbs. 8 dozen in a carton; weight, 46 lbs.

## Junior Clamp Assortments

### No. 574 Assortment

Consisting of Swivel Display Stand and *one box each* of the following five popular sizes of Junior Clamps illustrated on opposite page, being 1 dozen each of Nos. 558, 571 and 1/2 dozen each Nos. 549, 550, 572. (3 1/2 dozen Clamps in all.) Packed in a carton suitable for shipment.



List, each.....	\$13.90
Weight of carton, lbs.....	20

New  
List  
Price

### No. 575 Assortment

Consisting of Swivel Display Stand and *one box each* of all 12 numbers of "Junior" Clamps illustrated on opposite page, being 1 dozen each Nos. 557, 558, 570, 571, and 1/2 dozen each Nos. 548, 549, 550, 551, 552, 555, 572 and 556. (8 dozen Clamps in all.) Packed in a carton suitable for shipment.

List, each.....	\$36.50
Weight of box, lbs.....	60

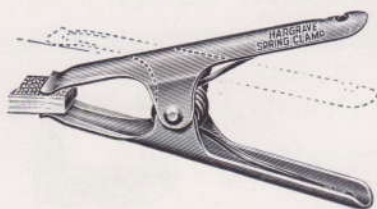
New  
List  
Price

This Swivel Display Stand is very attractive, unique and practical, requiring exceedingly small space. It is made from a 6" Standard Carriage Clamp, cadmium plated, with red enamel base, wing and tip.

Please order in **PACKAGE** quantities

## Improved Spring Clamp

New  
Item



### USED BY:

Aircraft Builders  
Auto Body Workers  
Bookbinders  
Cabinet Makers  
Cloth Cutters  
Homcrafters

Leather Workers  
Pattern Makers  
Sheet Metal Workers  
Trunk Makers  
Upholsterers  
Welders

This improved Spring Clamp has many uses and can be applied or removed quicker than any other type of clamp.

The surface of work being clamped is tangent to curve of jaw at any opening (see dotted line). This enables the Clamp to hold firmly, instead of slipping off the work, even when opened to full capacity. It is not affected by vibration. Shape of jaw prevents scratching or marring of the work from rough or burred edges.

Made of heavy gage steel, shaped to give a good hand grip; high-grade tempered spring, which will not weaken from use; large diameter rivet. All accurately fitted, insuring long and satisfactory service.

### Available in Three Sizes as Follows:

	Opening, Inches	List Dozen	Length, Inches	Weight, Dozen
No. 1	1	\$ 5.40	4	1 lb. 9 oz.
No. 2	2	6.70	6	4 lbs. 5 oz.
No. 3	3	13.40	9	8 lbs. 8 oz.

Nos. 1 and 2 packed 1 doz. in a box, No. 3 packed  $\frac{1}{2}$  doz. in a box.

Please order in **PACKAGE** quantities

### This Production Clamp Test Insures Satisfactory Service

**IMPORTANT**—Each Hargrave Standard Clamp, Body Clamp, Deep Clamp and Super-clamp is tested to more than its rated load. Hargrave Steel Bar Clamps are frequently tested to insure their efficiency.

This Tester is also useful in experimental work and in making comparative tests.

Space does not permit us to give the **Test Load** which is applied to all sizes of each pattern. However, to enable you to judge which is best suited for any particular operation, we give number of pounds applied in production test of one popular size of each as follows:

No. 552—6-in. Junior Clamp, lbs. ....	800
No. 540—6-in. Standard Carriage Clamp, lbs. .	2,300
No. 603—6-in. Body Clamp, lbs. ....	2,500
No. 44—6-in. Forged Steel Superclamp, lbs. .	3,700
No. 42—6-in. Forged Steel Superclamp, lbs. .	9,000
No. 40—6½-in. Forged Steel Superclamp, lbs.	22,000

Load applied to other sizes is in proportion to size and weight of the Clamp. **Test Load** for each Clamp is merely the number of pounds strain to which it has been tested, to discover any defect. Each Clamp will actually stand more.



This Hydraulic Clamp Tester quickly and accurately applies loads to 30,000 lbs. (15 tons).

Important  
Informa-  
tion



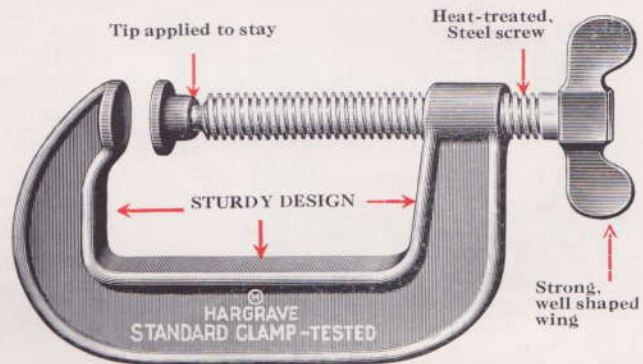
## Standard Carriage Clamp

No. 540

Each Clamp Power Tested

The Standard Clamp is preferred by the larger users of such tools, because of its superior design and construction. Also because it is tested.

Furnished with either oscillating (ball and socket) tip or riveted button tip. Oscillating tip will be furnished unless button tip is specified.



**Frame**—Special analysis of malleable iron, shaped to give *greatest strength for the weight*.

**Screw**—Steel; heat treatment prevents bending of screw, and battering of threads. "Acme" thread, used for years on Hargrave Clamps, combines *long life and rapid adjustment*.

Each Clamp Power Tested

No. 540

Opening, Inches	List Price, Dozen	Depth from Center of Screw, Inches	Quantity in Carton	Approx. Weight of Carton
2½	\$ 9.00	1¾	3 dozen (6 boxes)	32 lbs.
3	10.00	1⅞	3 dozen (6 boxes)	38 lbs.
4	12.00	2⅛	3 dozen (6 boxes)	66 lbs.
5	15.00	2½	2 dozen (4 boxes)	55 lbs.
6	18.00	2¾	2 dozen (4 boxes)	65 lbs.
7	22.00	3	1 dozen	38 lbs.
8	28.00	3¼	1 dozen	50 lbs. *
10	36.00	3⅝	½ dozen	40 lbs.
12	46.00	3⅝	½ dozen	48 lbs.
14	66.00	3¾	½ dozen	54 lbs.

Sizes, 2½ to 6 inches, are packed one-half dozen to a box. These sizes are shipped in cartons as are also the 7 to 12-inch. See listing of quantities above.

Please order in PACKAGE quantities

### Selecting the Right Clamp for the Job

Hargrave "C" Clamps are made in a wide range of patterns to meet all clamping needs. Do not use a **Light Duty** Clamp where heavy pressure is required.

Do not put excessive pressure on a large opening Clamp when used on small work. The long screw acts as a lever and tends to twist the Clamp.

On page 4 (opposite) is a list of test loads applied to the 6-in. Clamps in five patterns. Compare these to determine which Clamp you need for your work.

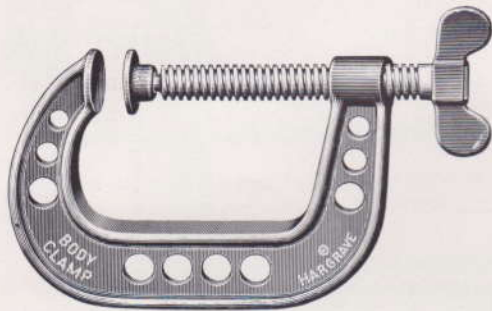
An occasional drop of oil on the screw, and in the tip of our Clamps, will add greatly to their life.

Important  
Informa-  
tion

## Body Clamp

No. 603

Each One Power Tested



Deep and very strong. Metal distributed for maximum strength without excessive weight. Designed especially for the automobile body trade and work requiring a longer reach than the ordinary "C" Clamp will take care of.

Steel screw, large diameter, with *deep cut "Acme" thread and good bearing*. Heat treatment prevents bending of screw, and battering of threads. Malleable frame, *heavily reinforced*. Furnished with oscillating (ball and socket) tip.

Each Clamp Power Tested

No. 603

Opening, inches.....	3	4	5	6	8	10	12
Depth, inches.....	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3	3 $\frac{5}{16}$	3 $\frac{3}{4}$	4	4 $\frac{1}{4}$
List, dozen.....	\$12.00	\$15.00	\$18.00	\$22.00	\$34.00	\$42.00	\$50.00
Weight, lbs., dozen.....	18 $\frac{1}{2}$	28	34 $\frac{1}{2}$	41 $\frac{1}{4}$	62	84	101 $\frac{1}{4}$

Packed in bulk.

## Welders' Clamp

No. 43—With Anti-Spatter Screw

(Patented—Patent Pending)

Each One Power Tested

**Screw**—Specially made of **Anti-Spatter** material to resist loading. Large in diameter to prevent bending or breaking. Furnished with oscillating (ball and socket) tip, put on to stay.

**Frame**—Forged Steel, **Heat Treated**, to give greatest strength for its weight, and machine tested. Drilled for ground wire.



Maximum opening, inches....	4	6	8	10	12
Minimum opening, inches.....	0	0	2	3	5
Depth of throat, inches.....	2 $\frac{1}{2}$	2 $\frac{3}{4}$	2 $\frac{3}{4}$	3	3
Diameter of Screw, inches.....	$\frac{7}{8}$	$\frac{7}{8}$	1	1 $\frac{1}{8}$	1 $\frac{1}{8}$
Weight, each, lbs. ....	4 lbs. 11 oz.	6 lbs. 2 oz.	7 lbs. 2 oz.	10 lbs. 3 oz.	11 lbs.
Test Load, lbs.....	8,000	9,000	10,000	11,000	12,000
List Price, each.....	\$7.00	\$8.40	\$9.40	\$12.00	\$14.00

Packed in bulk.

New  
Item



## Forged Steel Superclamps

(Patented)

**Frames** are forged by our patented process, from an extremely stiff steel, and are heat treated.

**Screws** are hardened steel, large in diameter, with wing forged integral.

**Test** of each Superclamp is made, before it goes into stock, on our Power Driven Hydraulic Testing Machine. The test load given for each Clamp is merely the number of pounds strain to which it has been tested. Each Clamp will actually stand more strain than the figure given.



Full length screws on all sizes. Acme thread; oscillating (ball and socket) tip.

### No. 44—Regular Service

With one piece forged steel screw and large wing. Either Swivel Lever or Pin Handle can be furnished special instead of the regular wing. Clamps with wing furnished from stock.

Opening, in.	2	3	4	6	8	10	12
Depth, in....	1 3/4	2 1/4	2 1/2	2 3/4	3 1/2	3 1/2	3 1/2
List, doz.....	\$18.00	\$20.00	\$24.00	\$28.00	\$40.00	\$56.00	\$68.00
Test load, lbs.	2200	2400	3000	3700	4500	5400	7200
Weight, lbs., doz.....	12	19	27	40	65	92	106

### No. 42—Medium Service

Maximum opening, in.	4	6	8	10
Minimum opening, in....	5/8	2 5/8	4 1/4	6 1/4
Depth of Throat, in....	2 1/2	2 3/4	2 3/4	3
Diameter of Screw, in....	3/4	3/4	3/4	3/4
Weight, each, lbs.....	4 1/2	5 1/2	6 1/4	8 1/2
Test Load, lbs.....	8,000	9,000	10,000	11,000
List Price, each.....	\$5.20	\$6.40	\$7.50	\$8.60

Maximum opening, in.....	12	15	18
Minimum opening, in.....	8 1/4	10	13
Depth of Throat, in.....	3	3 1/4	3 1/4
Diameter of Screw, in.....	3/4	7/8	7/8
Weight, each, lbs.....	9	13 1/2	15
Test Load, lbs.....	12,000	13,000	14,000
List Price, each.....	\$10.00	\$12.70	\$16.20



Sliding Pin (vise type) Handle; N. S. C. thread; oscillating (ball and socket) tip.

### No. 40—Heavy Service



Square Head Screw with N. S. C. thread and dog point. For full length screws, add 50 per cent to price of regular screws.

Maximum opening, in.....	3/4	1 1/4	1 3/4	2 1/4
Minimum opening, in.....	0	0	3/4	7/8
Depth of Throat, in.....	1 1/8	1 1/8	1 1/8	1 7/8
Diameter of Screw, in.....	3/8	3/8	1/2	5/8
Weight, each, lbs.....	1 3/8	3/4	1 1/2	2 3/4
Test Load, lbs.....	2,000	4,500	7,000	10,000
List Price, each.....	\$1.15	\$1.75	\$2.50	\$4.00
List, Screw only.....	.30	.35	.40	.70

Maximum opening, in.....	3 1/4	4 1/2	5 1/2	6 1/2
Minimum opening, in.....	1 3/8	2	2 1/2	3 1/8
Depth of Throat, in.....	2 3/4	2 3/4	3 1/4	3 1/4
Diameter of Screw, in.....	7/8	7/8	7/8	1
Weight, each, lbs.....	4 3/4	7	9 1/2	10
Test Load, lbs.....	13,000	16,000	19,000	22,000
List Price, each.....	\$5.60	\$7.00	\$9.00	\$11.00
List, Screw, only.....	1.30	1.40	1.50	1.90



## Deep Clamps

No. 573

A medium weight clamp, similar to the Standard Carriage Clamp, but with a deeper reach. Malleable frame;  $\frac{5}{8}$ -inch steel screw, heat-treated, with oscillating (ball and socket) tip.

### Power Tested

Opening, inches.....	3½	4½	6½
Depth, inches.....	4½	4½	4½
List, dozen.....	\$18.00	\$21.00	\$24.00
Weight, dozen, lbs.....	27¾	32¼	37¼

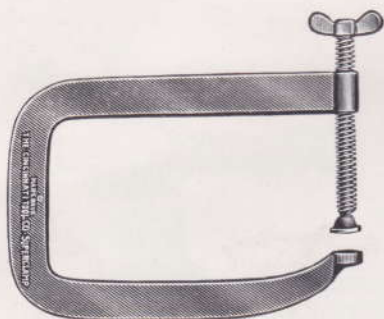
Packed in bulk.



## No. 44X—Deep Reach—Forged Steel

### Power Tested

The following list gives dimensions and list prices on stock sizes. Prices for special sizes are furnished on request.



Full length screws on all sizes. Acme thread; oscillating (ball and socket) tip.

Size, inches.....	6x8	6x15	8x12	12x16
Opening, inches.....	6	6	8	12
Depth, inches.....	8	15	12	16
List Price, each.....	\$6.00	\$10.00	\$10.00	\$15.00
Approximate Weight, lbs., each.....	7	13	13	19
Size of Steel, inches....	½x1½	½x2	½x2	½x2
Diameter of Screw, inches	⅝	¾	¾	¾

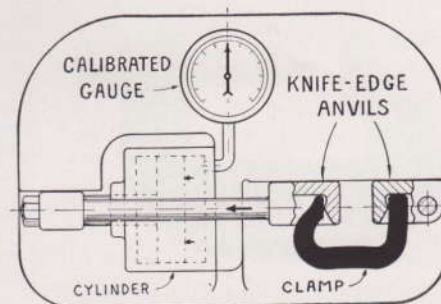
Packed in bulk.

## The Test

Each Hargrave Standard Carriage, Body, Deep and Superclamp has stood a test of more than its rated load on a Power Driven Hydraulic Machine, equipped with precision instruments. See picture on page 4.

It eliminates all those which could fail in normal service. (Other makes of Clamps are not tested.)

This protection costs you no more.



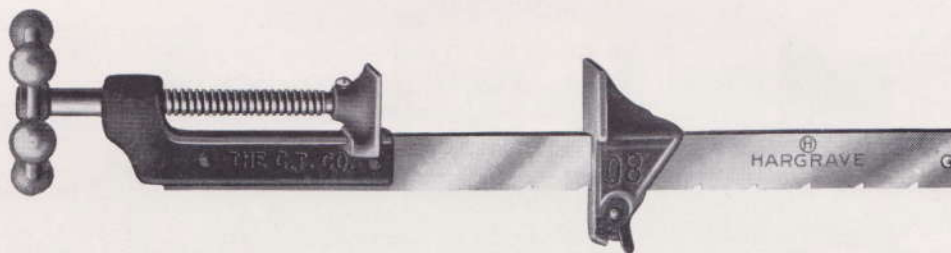
FORGED STEEL "C" Clamps are listed on page 7

New  
List  
Prices



## Joiners' Clamp

No. 458



This Clamp is intended for narrow gluing and clamping where speed and rapidity of handling are more necessary than power.

It has *high carbon steel bar*  $1\frac{1}{8} \times \frac{3}{16}$ -inch;  $\frac{1}{2}$ -inch, *heat treated, steel screw with "Acme" thread*; *malleable iron frame, tip, slide and wheel*; *steel dog, quickly adjusted*; *strong, light, durable*. Clamping surfaces are  $1\frac{1}{4}$  inches deep and  $1\frac{3}{8}$  inches wide.

No. 458

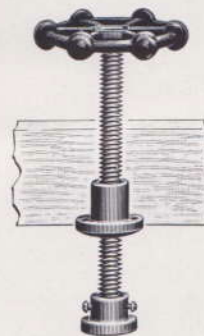
Opening, Feet	List Price, Pair (2 Clamps)	Weight, Pair
1	\$6.60	6 lbs.
$1\frac{1}{2}$	6.80	$6\frac{3}{4}$ lbs.
2	7.00	$7\frac{3}{4}$ lbs.
$2\frac{1}{2}$	7.20	$8\frac{1}{4}$ lbs.

## Press Screws

No. 36-T



No. 36



Steel Screw  $\frac{5}{8}$ -inch diameter, with 6-inch travel, "USS" Thread.

Tip,  $1\frac{1}{4}$  inches diameter.

Threaded Nut drives into 1" hole and is held firmly by two screws.

List Price, per dozen .....\$12.00

Weight per dozen, approximately  $13\frac{3}{4}$  lbs.

Packed in bulk.

Screw and Handle. List, each.....	\$0.60
Nut, List, each.....	.40
Tip, List, each.....	.40

New  
Item

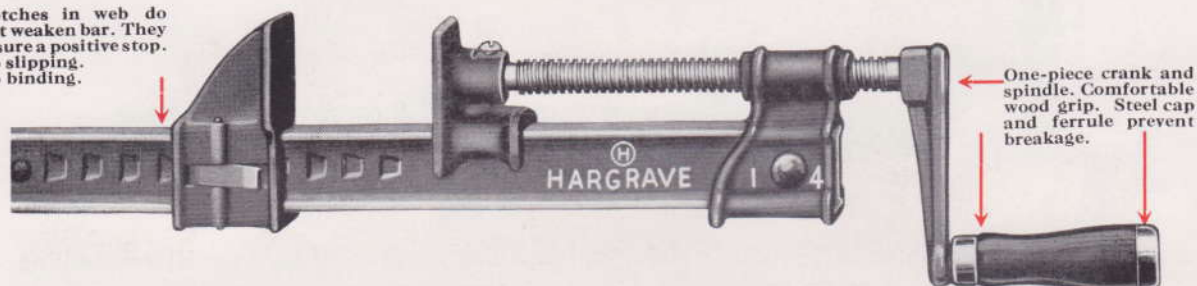


## Improved "I" Bar Clamp

(Patented)

No. 640

Notches in web do not weaken bar. They insure a positive stop. No slipping. No binding.



A rapid, powerful clamp, designed and constructed for the hard, everyday grind of production work.

**Bar**— $1\frac{1}{2} \times \frac{5}{8} \times \frac{1}{8}$ -inch "I" section. Shaped to stand the greatest strain for the weight. Wide, smooth flange will not mar the work.

**Notches**—Formed in web, leaving the bar full strength as no metal is removed. Spaced  $\frac{1}{2}$ -inch apart. Quick action, with no slipping.

**Slide**—Malleable iron. Cannot slip or bind. Always easily released. Heavy, tempered steel dog engages the notches, making a positive stop, and insuring years of service without repairs. See sectional view below. Clamping surfaces,  $1\frac{7}{8}$  in. wide,  $1\frac{1}{8}$  in. deep.

**Tip**—Malleable iron. Has case-hardened thrust bearing for end of screw, practically eliminating wear. Long yoke prevents binding on bar when clamping thin stock.

**Screw**—Steel,  $\frac{5}{8}$ -inch diameter, with deep-cut "Acme" thread. Heat treatment prevents bending of screw and battering of thread.

**Handle**—Wood, reinforced with heavy steel ferrule and cap to prevent breaking. (All Metal "T" Handle or Swivel Lever Handle optional. See illustrations below.)

## No. 640

Opening, feet.....	2	$2\frac{1}{2}$	3	4	5	6	7
List, pair (2 clamps).....	\$7.60	\$7.80	\$8.00	\$9.00	\$10.00	\$11.00	\$13.00
Weight, lbs., pair.....	$13\frac{1}{2}$	$14\frac{3}{4}$	16	$18\frac{1}{2}$	21	$23\frac{1}{2}$	26

No. 19  
Swivel Lever  
Handle



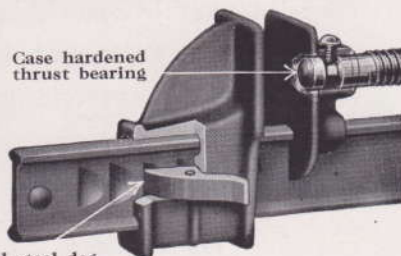
The No. 18 Metal "T" Handle can be furnished without extra charge if specified. No. 19 Lever Handle can be furnished special. Ask for price when required.

No. 18 All-Metal  
"T" Handle



The "Acme" Thread has an included angle of  $29^\circ$  which centers the screw in the bearing and has a wider thread face than the square thread commonly used. Longer life without repairs.

No other Clamp has this *Patented Locking Device*.  
It affords a *positive stop*, cannot bind or slip, yet releases readily.  
Heavy, tempered steel dog bears against body of slide—nothing to break or wear out. No clamping pressure on pin.  
Case-hardened thrust bearing in tip, centers the screw and practically eliminates wear at this point.



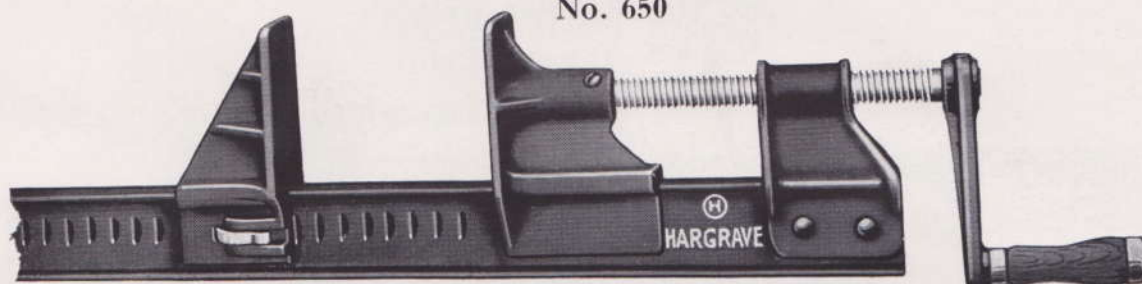
Hardened steel dog  
Quick action, with no slipping



## Heavy "I" Bar Clamp

(Patented)

No. 650



### For Work Requiring a Deep Reach

This Heavy Pattern "I" Bar Clamp is very satisfactory for work requiring deep reach. Steel bar is  $2\frac{1}{8} \times \frac{3}{16} \times \frac{11}{16}$ -inch. Clamping surfaces are 3 inches wide, 4 inches high.

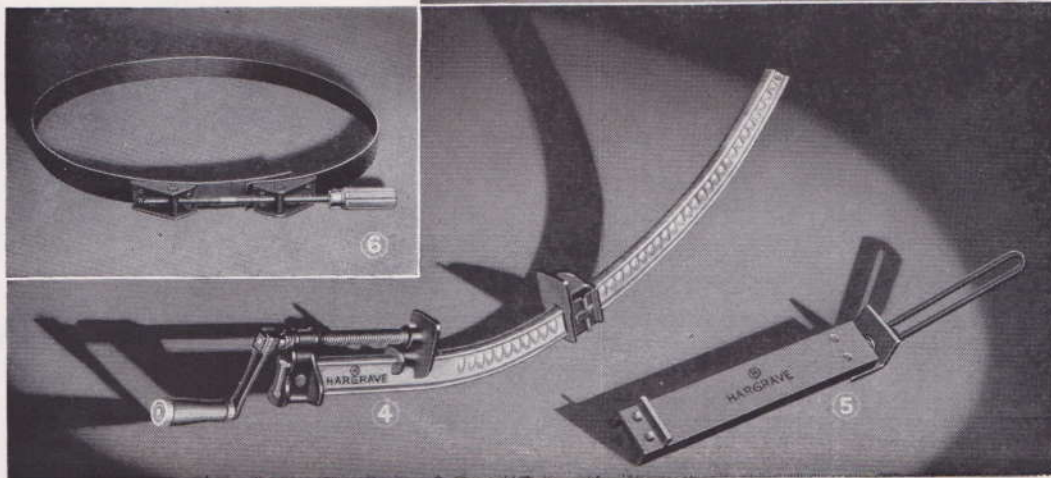
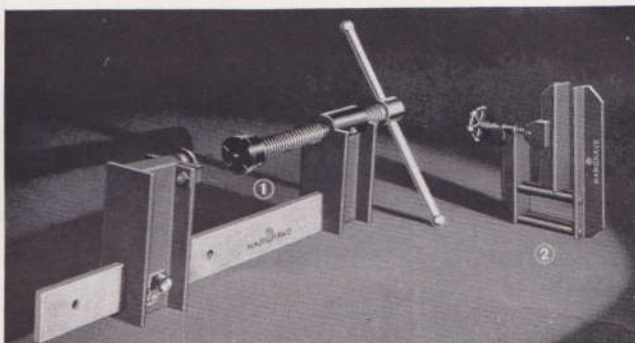
Heat-treated Steel Screw,  $\frac{3}{4}$ -inch diameter. 2 inches from center of screw to bar.

Details of construction are essentially the same as those of the No. 640 Clamp described on the opposite page.

No. 650

Opening, feet.....	3	4	5	6	7	8	10
List, pair (2 Clamps).....	\$20.00	\$21.50	\$23.00	\$25.00	\$27.00	\$30.00	\$36.00
Weight—Pair, lbs.....	31	35	39	43	47	51	55

Illustrated at the right and below are some of the special clamps which we have made—send us your unusual problems in clamps.

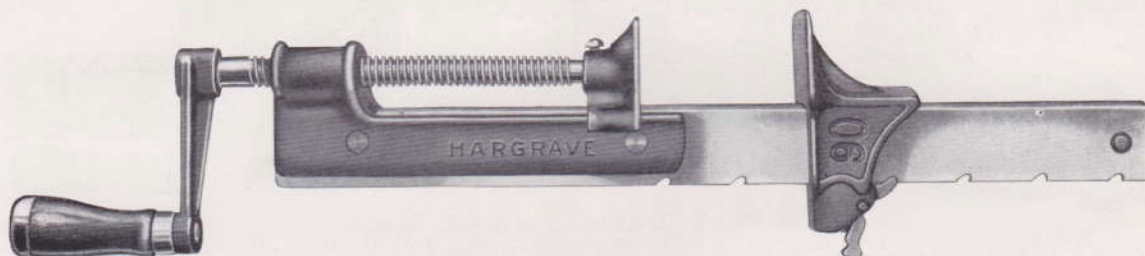


## New Adjustable Clamps

(Patented)

No. 415—Regular Weight

No. 425—Heavy Weight



This is a strong, durable, convenient, general purpose clamp. It is especially useful in all wide clamping, such as sash, doors, blinds, furniture, etc. It is made in two patterns—the regular and heavy. The regular pattern has clamping surfaces 2 inches deep,  $1\frac{7}{8}$  inches wide; screw is  $\frac{5}{8}$ -inch in diameter. The clamping surfaces of the heavy pattern are  $2\frac{1}{4} \times 2\frac{1}{4}$  inches; screw is  $\frac{3}{4}$ -inch in diameter.

### Note the Following Points of Superiority

The bar is high carbon manganese steel, *giving great strength*. Crank, frame, tip and slide are of the best grade of malleable iron. Dog for slide is *tempered steel*. Tip has *case hardened bearing* to take end thrust of screw.

Screw is heat-treated, with *deep cut "Acme" thread* and *extra long bearing*, insuring long life to the clamp.

### No. 415

#### Regular Pattern $1\frac{1}{2} \times \frac{1}{4}$ -inch Bar

Opening, Feet	List, Pair (2 Clamps)	Weight, Pair
2	\$ 7.60	13 $\frac{1}{2}$ lbs.
2 $\frac{1}{2}$	7.80	14 $\frac{3}{4}$ lbs.
3	8.00	16 lbs.
4	9.00	18 $\frac{1}{2}$ lbs.
5	10.00	21 lbs.
6	11.00	23 $\frac{1}{2}$ lbs.

### No. 425

#### Heavy Pattern, $1\frac{3}{4} \times \frac{3}{8}$ -inch Bar

Opening, Feet	List, Pair (2 Clamps)	Weight, Pair
3	\$16.50	28 $\frac{3}{4}$ lbs.
4	17.00	35 lbs.
5	18.00	37 $\frac{1}{4}$ lbs.
6	19.00	41 $\frac{1}{2}$ lbs.
7	20.50	46 $\frac{3}{4}$ lbs.
8	22.00	52 $\frac{1}{2}$ lbs.
10	28.00	60 $\frac{1}{4}$ lbs.



No. 19  
Swivel Lever  
Handle

Crank with reinforced Wood Handle is regularly furnished as it is easier on the operator's hand.

The No. 18 Metal "T" Handle or No. 19 Swivel Lever Handle can be furnished on No. 415 and No. 440 Clamps without extra charge, if specified.



No. 18 All-Metal  
"T" Handle

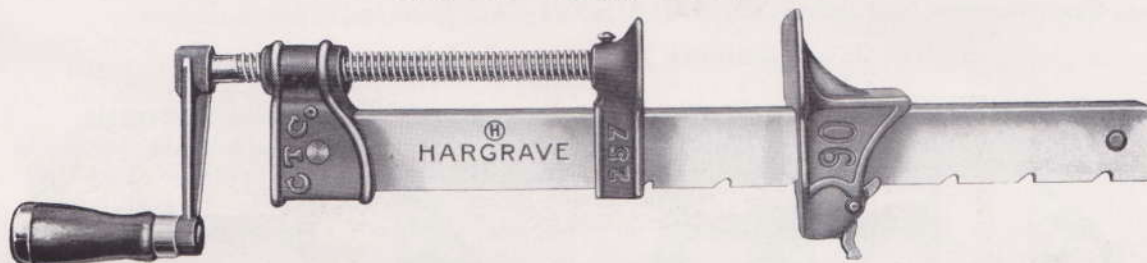


## Perfection Clamps

(Patented)

No. 440—Regular Weight

No. 450—Heavy Weight



This is a strong, durable, convenient, general purpose clamp. It is especially useful in all wide clamping, such as sash, doors, blinds, furniture, etc. It is made in two patterns—the regular and heavy. The regular pattern has clamping surfaces 2 inches deep,  $1\frac{7}{8}$  inches wide; screw is  $\frac{5}{8}$ -inch in diameter. The clamping surfaces of the heavy pattern are  $2\frac{1}{4} \times 2\frac{1}{4}$  inches; screw is  $\frac{3}{4}$ -inch in diameter.

### Note the Following Points of Superiority

The bar is high carbon manganese steel, *giving great strength*. Crank, frame, tip and slide are of the best grade of malleable iron. Dog for slide is *tempered steel*. Tip has case hardened bearing to take end thrust of screw.

Screw is *heat-treated*, with deep cut "Acme" thread and extra long bearing, insuring long life to the clamp.

#### No. 440

##### Regular Pattern, $1\frac{1}{2} \times \frac{1}{4}$ -inch Bar

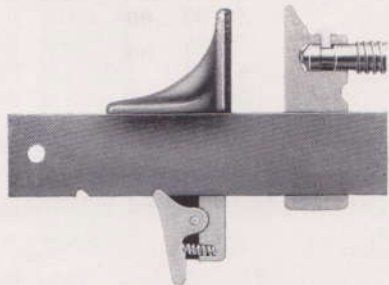
Opening, Feet	List, Pair (2 Clamps)	Weight, Pair
2	\$ 7.60	12 lbs.
$2\frac{1}{2}$	7.80	$13\frac{1}{4}$ lbs.
3	8.00	$14\frac{1}{2}$ lbs.
4	9.00	17 lbs.
5	10.00	$19\frac{1}{2}$ lbs.
6	11.00	22 lbs.

#### No. 450

##### Heavy Pattern, $1\frac{3}{4} \times \frac{3}{8}$ -inch Bar

Opening, Feet	List, Pair (2 Clamps)	Weight, Pair
3	\$16.50	$27\frac{1}{4}$ lbs.
4	17.00	$31\frac{1}{2}$ lbs.
5	18.00	$35\frac{1}{2}$ lbs.
6	19.00	40 lbs.
7	20.50	$44\frac{3}{4}$ lbs.
8	22.00	50 lbs.
10	28.00	$57\frac{3}{4}$ lbs.

No. 18, All-metal "T" Handle or No. 19 Swivel Lever Handle can be supplied on No. 440, without extra charge, if desired.



Steel dog rests in socket in slide. This prevents the rivet from taking any clamping strain. Practically unbreakable.

Case hardened thrust bearing prevents screw from wearing thru tip. Also prevents shearing of set screw.

Our Perfection and New Adjustable Clamps both have these features.



Crank and tapered spindle are made in one solid piece. Will not wobble.

Wood grip is reinforced by steel cap and ferrule to prevent breakage.

Steel Ferrule at each end of wood handle prevents breakage. Spindle and crank are one piece; handle will not wobble.

Crank is driven on flat end of screw and screw is then riveted over. No pin to shear off. The "I" Bar, New Adjustable and Perfection Clamps have these features.

## Quick Clamps

(Patented)

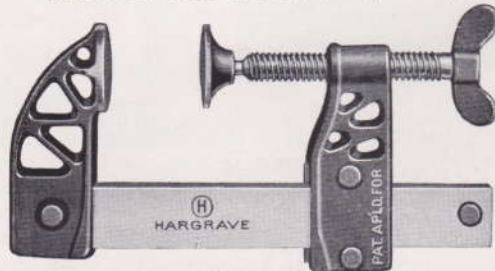
Patented construction of frame and foot enables our Quick Clamps to stand great clamping strain without twisting.

The patented *Clutch* will not slip or bind. Always easily released by hand.

"Depth" is Distance from Center of Screw to Bar

### Nos. 498-500-514 Patterns

(Movable Frame, Stationary Foot)



#### No. 498

Bar, 1 x  $\frac{5}{16}$ -inch. Depth, 2 inches

Opening, Inches	List, Dozen	Approx. Wt., Dozen
4	\$24.00	26 $\frac{1}{4}$ lbs.
6	24.00	28 $\frac{1}{2}$ lbs.
8	25.00	30 $\frac{3}{4}$ lbs.
12	27.00	35 $\frac{1}{4}$ lbs.
18	30.00	42 lbs.
24	33.00	48 $\frac{3}{4}$ lbs.
30	36.00	55 $\frac{1}{4}$ lbs.

#### No. 500

Bar, 1 $\frac{1}{2}$  x  $\frac{1}{4}$ -inch. Depth, 2 $\frac{1}{2}$  inches

Opening, Inches	List, Dozen	Approx. Wt., Dozen
4	\$30.00	40 $\frac{3}{4}$ lbs.
6	30.00	43 $\frac{1}{2}$ lbs.
8	31.00	46 $\frac{1}{4}$ lbs.
12	33.00	51 $\frac{3}{4}$ lbs.
18	36.00	60 lbs.
24	39.00	68 $\frac{1}{4}$ lbs.
30	42.00	76 $\frac{1}{2}$ lbs.
36	45.00	84 $\frac{3}{4}$ lbs.

#### No. 514

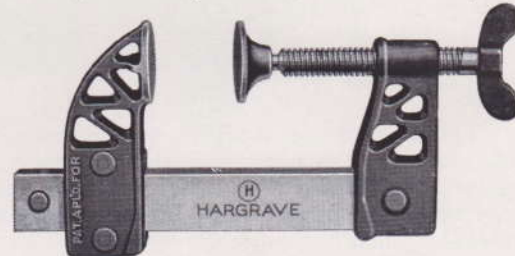
Especially designed for Heavy Work

Bar, 1 $\frac{3}{4}$  x  $\frac{3}{8}$ -inch. Depth, 3 inches.

Opening, Inches	List, Dozen	Approx. Wt., Dozen
6	\$56.00	78 $\frac{1}{2}$ lbs.
8	58.00	83 lbs.
12	62.00	92 lbs.
18	68.00	105 $\frac{1}{2}$ lbs.
24	74.00	119 lbs.
36	86.00	146 lbs.
48	98.00	173 lbs.
60	110.00	200 lbs.

### Nos. 499-501-503 Patterns

(Stationary Frame, Movable Foot)



#### No. 499

Bar, 1 x  $\frac{5}{16}$ -inch. Depth, 2 inches

Opening, Inches	List, Dozen	Approx. Wt., Dozen
4	\$24.00	26 $\frac{1}{4}$ lbs.
6	24.00	28 $\frac{1}{2}$ lbs.
8	25.00	30 $\frac{3}{4}$ lbs.
12	27.00	35 $\frac{1}{4}$ lbs.
18	30.00	42 lbs.
24	33.00	48 $\frac{3}{4}$ lbs.
30	36.00	55 $\frac{1}{4}$ lbs.

#### No. 501

Bar, 1 $\frac{1}{2}$  x  $\frac{1}{4}$ -inch. Depth, 2 $\frac{1}{2}$  inches

Opening, Inches	List, Dozen	Approx. Wt., Dozen
4	\$30.00	40 $\frac{3}{4}$ lbs.
6	30.00	43 $\frac{1}{2}$ lbs.
8	31.00	46 $\frac{1}{4}$ lbs.
12	33.00	51 $\frac{3}{4}$ lbs.
18	36.00	60 lbs.
24	39.00	68 $\frac{1}{4}$ lbs.
30	42.00	76 $\frac{1}{2}$ lbs.
36	45.00	84 $\frac{3}{4}$ lbs.

#### No. 503

Bar, 1 $\frac{3}{4}$  x  $\frac{3}{8}$ -inch. Depth, 4 $\frac{1}{2}$  inches

Opening, Inches	List, Dozen	Approx. Wt., Dozen
6	\$56.00	70 $\frac{1}{2}$ lbs.
8	58.00	75 lbs.
12	62.00	84 lbs.
18	68.00	97 $\frac{1}{2}$ lbs.
24	74.00	111 lbs.
36	86.00	138 lbs.
48	98.00	165 lbs.

Packed in bulk.

Lower  
List  
Prices



## Quick Clamps

(Patented)

Hargrave Quick Clamps can be instantly applied or removed from the work; handier to operate, take up less room and save a great amount of time over ordinary clamps.

Especially useful in pattern making, boat and ship building, automobile body, airplane and parlor frame work.

Rigid at any opening, thus overcoming the weakness of the long and easily bent screw of the old "C" clamp.

The bar is high carbon manganese steel, rolled from our special analysis. Frame and foot are of the best grade of malleable. Their construction prevents side twist and enables the clamp to stand great strain. Screw is heat-treated steel and has "Acme" thread, with long bearing, insuring long life. The gripping blocks are hardened steel.

### No. 494

(Movable Frame, Stationary Foot, Wood Handle)



Opening, Inches	Bar, $\frac{3}{16}$ x $\frac{5}{8}$ -inch. List, Dozen	Depth, 2 inches Approx. Wt., Dozen
4	\$15.00	7 $\frac{3}{4}$ lbs.
6	15.50	8 $\frac{1}{2}$ lbs.
8	16.00	9 $\frac{3}{8}$ lbs.
12	17.50	11 lbs.
18	20.00	13 $\frac{1}{2}$ lbs.
24	22.50	16 $\frac{1}{8}$ lbs.

### No. 506

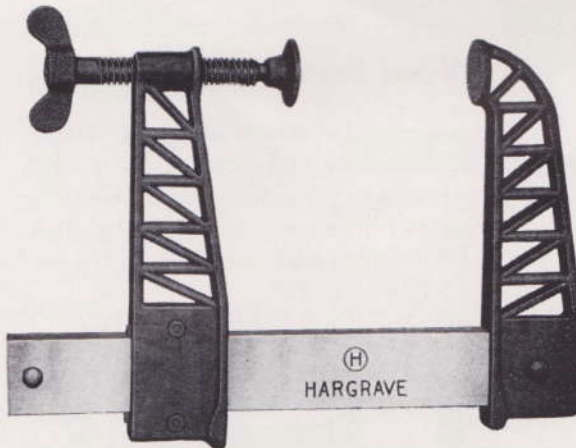
(Movable Frame, Stationary Foot, Wood Handle)



Opening, Inches	Bar, 1 x $\frac{5}{16}$ -inch. List, Dozen	Depth, 3 $\frac{1}{2}$ inches Approx. Wt., Dozen
6	\$26.00	34 lbs.
8	27.00	36 $\frac{1}{4}$ lbs.
12	29.00	40 $\frac{3}{4}$ lbs.
18	32.00	46 $\frac{1}{2}$ lbs.
24	35.00	52 $\frac{1}{4}$ lbs.
30	38.00	58 lbs.

### Nos. 512-502-508-510 Patterns

(Movable Frame, Stationary Foot)



Opening, Inches	Bar 1 $\frac{1}{2}$ x $\frac{1}{4}$ -inch. List, Dozen	Depth, 4 inches Approx. Wt., Dozen
6	\$34.00	47 $\frac{1}{4}$ lbs.
8	35.00	50 lbs.
12	37.00	55 $\frac{1}{2}$ lbs.
18	40.00	63 $\frac{3}{4}$ lbs.
24	43.00	72 lbs.

### No. 502

Opening, Inches	Bar, 1 $\frac{3}{4}$ x $\frac{3}{8}$ -inch. List, Dozen	Depth, 4 $\frac{1}{2}$ inches Approx. Wt., Dozen
6	\$56.00	70 $\frac{1}{2}$ lbs.
8	58.00	75 lbs.
12	62.00	84 lbs.
18	68.00	97 $\frac{1}{2}$ lbs.
24	74.00	111 lbs.
36	86.00	138 lbs.
48	98.00	165 lbs.
60	110.00	192 lbs.

### No. 508

Opening, Inches	Bar, 1 $\frac{3}{4}$ x $\frac{3}{8}$ -inch. List, Dozen	Depth, 6 inches Approx. Wt., Dozen
6	\$62.00	90 lbs.
8	64.00	95 lbs.
12	68.00	105 lbs.
18	74.00	119 lbs.
24	80.00	133 lbs.
36	92.00	147 lbs.

### No. 510

Opening, Inches	Bar, 2 x $\frac{1}{2}$ -inch. List, Dozen	Depth, 9 inches Approx. Wt., Dozen
6	\$100.00	180 lbs.
8	104.00	187 lbs.
12	112.00	201 lbs.
18	124.00	222 lbs.
24	136.00	243 lbs.

Packed in bulk.

Lower  
List  
Prices

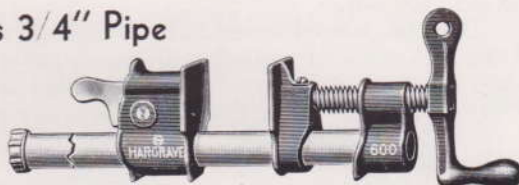
## Clamp Fixtures

Nos. 600, 610 and 620 Fixtures can be applied to any odd length of pipe. Easy to assemble. We recommend black iron pipe, extra heavy for ordinary clamping and double extra heavy when greater pressure is required. Slides WILL NOT SLIP under pressure and WILL NOT STICK when pressure is released. Parts are MALLEABLE; Screws are STEEL with "Acme" thread.

### No. 600 . . . Fits 3/4" Pipe

Screw is 5/8" in diameter; clamping surface of both slide and tip is 1 3/4" wide, 1 3/4" high. Hardened steel cam with milled teeth locks slide.

Packed one set in a box.

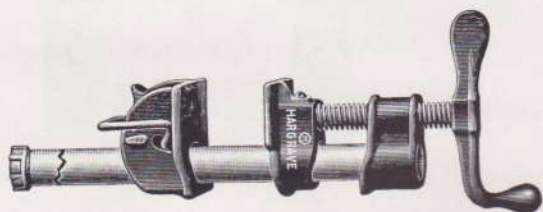


No. 600 Clamp Fixture (without pipe). List, dozen sets . . . . . \$30.00

### No. 610 . . . Fits 3/4" Pipe

Screw is 5/8" in diameter; clamping surface of both slide and tip is 1 7/8" wide, 1 7/8" high. Slide is securely locked in position by three steel plates having concave milled bevel to fit the pipe. Always easily released when pressure is removed.

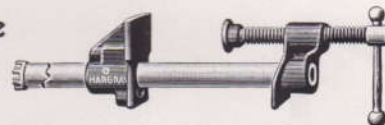
No. 610 Fixture (without pipe). List, dozen sets . . . . . \$33.00



Packed one set in a box.

### No. 620 . . . Fits 1/2" Pipe

Screw is 1/2" in diameter, fitted with 1 5/8" diameter tip; clamping surface of slide is 1 1/2" wide, 1 3/8" high. Slide has hardened screw gripping device above and below.



Packed two sets in a box.

No. 620 Fixture (without pipe). List, dozen sets . . . . . \$18.00

### No. 614 . . . Fits 2" x 4" Wood Bar



Strong and powerful, for general clamping. Frame, tip, slide and crank are malleable; screw is steel, 5/8" in diameter, with "Acme" thread; clamping surfaces of tip and slide are 1 1/8" wide, 1 7/8" high.

Packed in bulk.

No. 614 Fixture (without bar). List, dozen sets . . . . . \$30.00

### No. 615 . . . Fits 1 1/8" x 2 1/4" Wood Bar

Frame, tip and slide are malleable; screw is steel, 1/2" diameter, with "Acme" thread; clamping surfaces of tip and slide are 1 1/2" wide, 1 7/8" high. (Furnished with either hand wheel or crank.)



Packed in bulk.

No. 615 (with wheel handle), (without bar). List, dozen sets . . . . . \$15.00  
No. 615-18 1/2 (with crank). List, dozen sets . . . . . 15.00

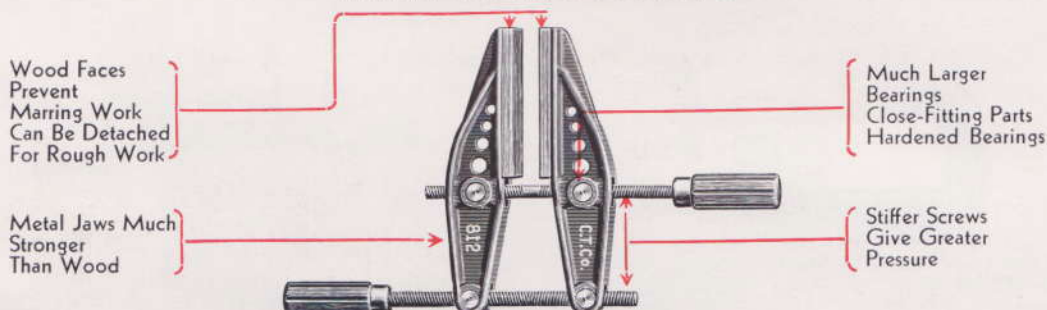
A SET of Fixtures consists of irons complete to make ONE CLAMP (frame, screw, handle, tip and slide) without the pipe or wood bar.

New  
Item

New  
List  
Nos.  
610  
620



## Steel Spindle Hand Screws WITH METAL JAWS

New  
Item

Each Clamp is Power Tested to 4000 lbs. Will stand even more before failure.

Easy balance. No excess weight. No metal contact with finished work.

Stronger parts give much longer life. Not harmed by heat or moisture. This Clamp takes the abuse that wrecks the wood jaw clamp.

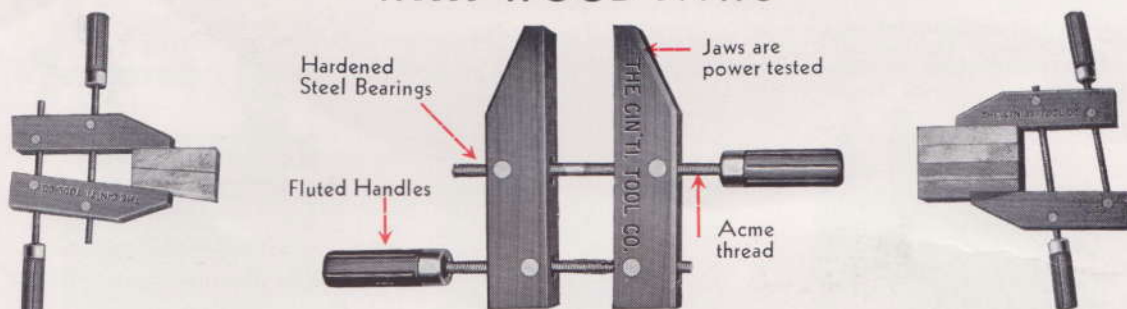
**SPECIFICATIONS**—Length of jaw, overall,  $10\frac{3}{4}$  inches. Clamping surfaces,  $5\frac{1}{2} \times 2$  inches. Maximum reach (end of jaw to screw), 6 inches.

### No. 812 ADJUSTING CLAMP

Opening, inches.....	4½	6½	8½	10½	12½
List price, dozen.....	\$33.00	\$35.00	\$37.00	\$39.00	\$41.00
Weight, dozen.....	55 lbs.	57 lbs.	60 lbs.	62 lbs.	65 lbs.

Packed, 4 pcs. of one size to a carton.

## WITH WOOD JAWS



### Strong . . . Durable . . . Satisfactory

Hargrave Hand Screws are conventional in size and proportion, but have refinements of construction found in no other Hand Screw.

**SPINDLES**—Cold-drawn steel. "Acme" thread is longer wearing and has less frictional resistance than the "V" thread commonly used.

**BEARINGS**—Hardened Steel, adding greatly to the life of the Hand Screw.

**JAWS**—Selected maple, properly seasoned and oiled.

**HANDLES**—Fluted, giving good grip under all conditions.

Stock No.....	706	708	710	712	714	716	718
Length of Jaws, inches.....	6	8	10	12	14	16	18
Opening, inches.....	3	4½	6	8½	10	12	14
List price, doz.....	\$18.00	\$21.00	\$24.00	\$27.00	\$30.00	\$36.00	\$42.00
Approx. Wt., Lbs., Doz.....	14	28	36	58	72	96	108

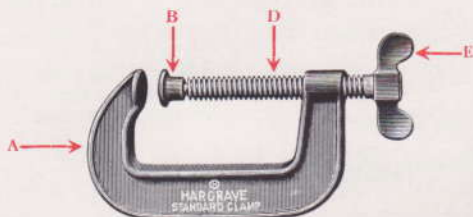
ADJUSTABLE PATTERN is illustrated above. NON-ADJUSTABLE PATTERN (opening and closing the jaws parallel) can be furnished when desired.

Packed, four smaller sizes (6, 8, 10 and 12 in.) ½ Doz. to a carton; Three larger sizes (14, 16 and 18 in.) ⅓ Doz. to a carton.

Please order in PACKAGE quantities

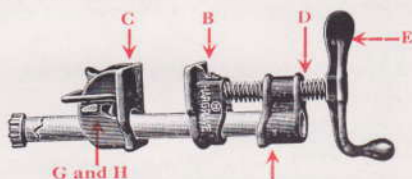
## Repair Parts for Clamps

In ordering parts, specify catalog **Stock Number** of the clamp; also give **Letter** designating the part needed, as indicated below:



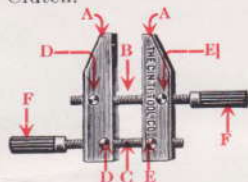
These letters apply to **Stock Numbers 540-603-573-44-44X-42-40** and all Junior Clamps.

- A—Frame.
- B—Tip.
- D—Screw and Wing.
- E—Wing only.



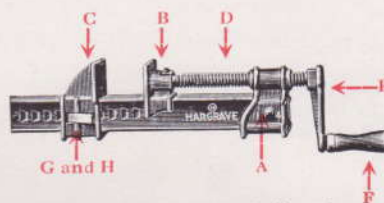
These letters apply to **Stock Numbers 610-620** (Pipe Fixtures).

- A—Frame.
- B—Tip.
- C—Slide complete with plates and spring.
- D—Screw and Crank (610) or Screw and Pin (620).
- E—Crank only.
- G—Clutch Plates (610) set of 4.
- H—Spring for Clutch.



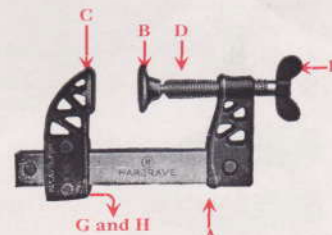
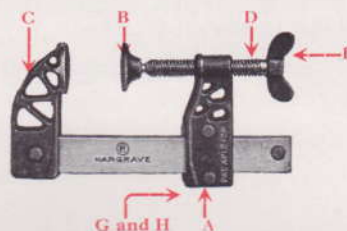
These letters apply to **Hand Screws**.

- A—Wood Jaw.
- B—Upper or Middle Screw.
- C—Lower or Outer Screw.
- D—Nut, right-hand thread.
- E—Nut, left-hand thread.
- F—Handle.



These letters apply to **Stock Numbers 640-650-415-425-440-450-458**.

- A—Frame with Rivet.
- B—Tip.
- C—Slide complete with Dog and Spring.
- D—Screw and Crank complete.
- E—Crank only.
- F—Wood Handle.
- G—Dog (trigger) with Rivet.
- H—Spring for Dog.



These letters apply to all **Quick Clamps**.

- A—Frame, complete with Screw, Wing, Tip, Clutch Blocks and Springs.
- B—Tip only.
- C—Slide or Foot.
- D—Screw and Wing.
- E—Wing only.
- G—Clutch Block or Clutch Screws.
- H—Spring for Clutch.

## LONGER AND BETTER SERVICE FROM YOUR CLAMPS

### Lubrication

Like other machines, lubrication lengthens their life. Occasional oiling of their bearings (screw and tip) will prevent stripped threads and lost tips.

### Selection

Use a Clamp of the proper capacity. Do not use a large "C" Clamp on thin work, under heavy load. This will spring the screw or frame.

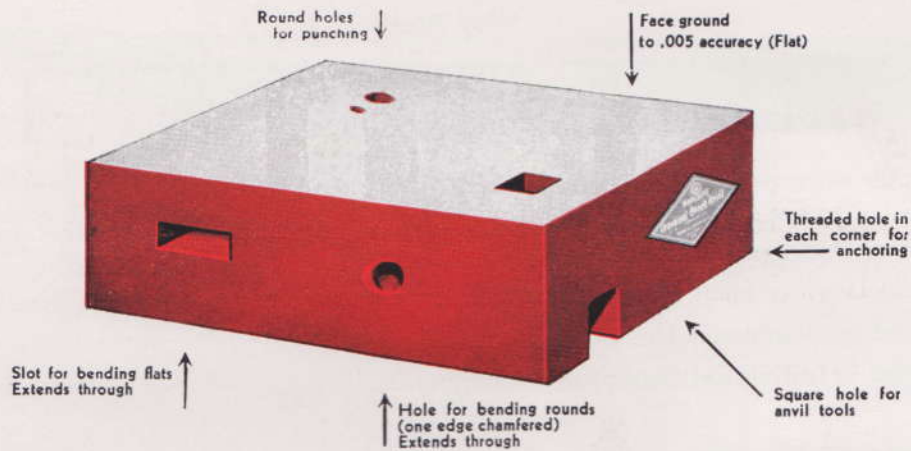
If your work is uniform in size, one of the Junior, Standard Carriage, Body or Superclamps will be best, depending on the amount of pressure required. (See page 4 for comparison of strength.)

Should your work vary greatly in size and the amount of pressure required, choose one of our Quick Clamps (pages 14 and 15). They are very adaptable.



# Universal Bench Anvil

PATENTED



## Steel Heat-treated Top

Made entirely of steel, with heavy hardened plate top welded to heavy angle steel base. The top is surface ground to close limits.

In the repair shop, garage, industrial or manufacturing plant you'll find the more you use the Universal Bench Anvil the more uses you will find for it. Useful as a surface plate where extreme accuracy is not required.

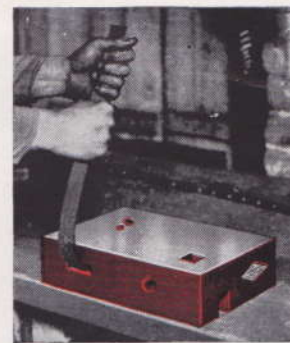
Intelligently designed to take care of a wide variety of jobs, and is sold at a price that makes it a real paying investment. Nothing to get out of order, and any mechanic will appreciate its practical value.



Hole is chamfered so that rounds are bent with a full-rounded curve. Hole extends all the way through so that any length can be bent.



More convenient than an anvil because it is right at your elbow on the bench. Saves time and labor. Two round holes are provided for punching.



Slot for bending flat bars extends entirely through the anvil, so that any length may be bent.

### DIMENSIONS OF HOLES IN ANVIL

	Top Inches	Height, Inches	Weight	List Each	FACE		SIDE	
					Square, Inches	Round, Inches	Flat, Inches	Round, Inches
No. 25	6 x 9	2 1/4	13 1/2 lbs.	\$10.00	1	5/8 - 3/8	3/8 x 1 7/8	3/4
No. 26	8 x 12	2 7/8	29 lbs.	15.00	1	5/8 - 3/8	3/8 x 1 7/8	3/4

New  
List  
Price

## Cold Chisel

No. 200

Alloy Steel



Not widened at point. Size of steel is same as width of blade.

All **Hargrave** Chisels, Punches, Star Drills, etc., are **trip-hammer** forged (not drop-forged) from our special analysis alloy steel.

Each tool is individually **Power Tested** for hardness, toughness and freedom from flaws.

Finished in a distinctive blue lacquer, polished point.

Enclosed in **Individual Cellophane Wrappers**.

## No. 200

Size, Inches	List Price, Dozen	Length, Inches	Weight, Dozen
$\frac{1}{4}$	\$ 3.00	5	14 ozs.
$\frac{5}{16}$	3.30	5	1 lb. 7 ozs.
$\frac{3}{8}$	3.60	5	2 lbs. 3 ozs.
$\frac{1}{2}$	4.20	6	3 lbs. 12 ozs.
$\frac{5}{8}$	5.00	$6\frac{1}{2}$	6 lbs.
$\frac{3}{4}$	6.60	$7\frac{1}{2}$	12 lbs.
$\frac{7}{8}$	8.00	8	14 lbs. 4 ozs.
1	10.00	$8\frac{1}{2}$	19 lbs. 13 ozs.

Packed  $\frac{1}{4}$ -inch, one dozen, and  $\frac{3}{8}$  to 1 inch, one-half dozen to a box

Please order in **PACKAGE** quantities

## Extra Long Cold Chisel

No. 205

Alloy Steel—Not Widened at Point



## No. 205—Black Lacquer Finish

Size, Inches	List Price, Dozen	Weight, Dozen	Size, Inches	List Price, Dozen	Weight, Dozen
$\frac{1}{2}$ x 8	\$ 4.50	5 lbs.	$\frac{5}{8}$ x 18	\$ 9.00	19 lbs.
$\frac{5}{8}$ x 8	5.50	8 lbs.	$\frac{3}{4}$ x 18	10.00	27 lbs.
$\frac{1}{2}$ x 10	5.00	7 lbs.	$\frac{7}{8}$ x 18	12.00	37 lbs.
$\frac{5}{8}$ x 10	6.00	10 lbs.	1 x 18	15.00	47 lbs.
$\frac{3}{4}$ x 10	7.00	14 lbs.	$1\frac{1}{4}$ x 18	23.00	75 lbs.
$\frac{7}{8}$ x 10	8.50	18 lbs.	$\frac{3}{4}$ x 24	13.00	36 lbs.
1 x 10	11.00	23 lbs.	$\frac{7}{8}$ x 24	15.00	48 lbs.
$\frac{1}{2}$ x 12	5.50	9 lbs.	1 x 24	20.00	70 lbs.
$\frac{5}{8}$ x 12	6.50	12 lbs.	$1\frac{1}{4}$ x 24	28.00	102 lbs.
$\frac{3}{4}$ x 12	7.50	18 lbs.	$1\frac{1}{2}$ x 24	48.00	146 lbs.
$\frac{7}{8}$ x 12	10.00	24 lbs.	$1\frac{1}{4}$ x 36	39.00	155 lbs.
1 x 12	12.00	30 lbs.	$1\frac{1}{2}$ x 36	64.00	222 lbs.

Packed in bulk

Each Chisel is **POWER TESTED** for proper hardness and toughness—see page 21

New  
Cello-  
phane  
Wrappers



## Rivet Buster

No. 580



New  
Item

This tool is designed especially for cutting off rivet heads, bolt heads and similar shearing work for which a regular cold chisel should not be used. Specify it for such service.

Trip-hammer forged from Alloy Steel and Power Tested for hardness, toughness and freedom of flaws.

No. 580

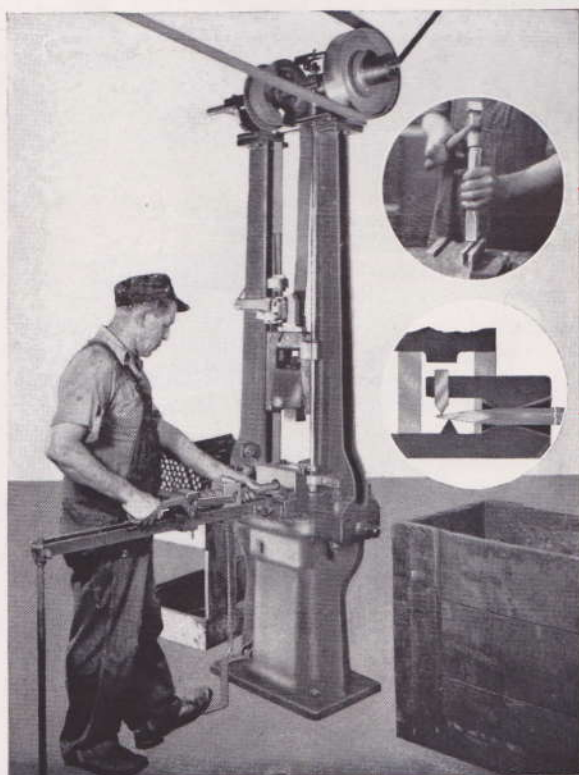
Cutting Edge, Inches	Size of Stock, Inches	Length, Inches	List Price, Dozen	Weight, Dozen
$\frac{1}{2}$	$\frac{3}{4}$	9	\$ 9.00	12 lbs. 12 oz.
$\frac{5}{8}$	$\frac{7}{8}$	12	12.00	24 lbs.
$\frac{3}{4}$	1	18	25.00	48 lbs.

Packed in bulk



## Production Test

of HARGRAVE Alloy Steel Cold Chisels



It is easy to make a chisel hard. But, to make it hard **and** tough is a problem, even with alloy steels. Therefore, for your protection, we give **each one** this **thorough test**:

- 1—We test the cutting edge on a heat-treated spring steel bar (hard enough to cut open hearth steel). Each one must cut a chip from this bar, and the edge must stand it.
- 2—Then each side of the blade takes an off-center blow in the Drop-Testing Device. The Chisel is held on the hard edge of the anvil and the striker, taking the blow from the falling ram, inflicts as much as 150,000 pounds stress on the Chisel blade.

Those with flaws break.

The tough ones take it.

Only those which are **hard** enough to cut anything a Chisel is supposed to cut and **tough** enough to give lasting service go into stock. This assures **satisfaction** to the user, **repeat orders** to the distributor and **eliminates trouble** for all of us.

## Cape, Half-Round, Diamond Point and Round Nose Chisels

Alloy Steel

These chisels are of the same quality as our Cold Chisels. The high-grade forging of these tools and the careful design give them a better balance than the ordinary tools. Finished in a distinctive blue lacquer, polished point. Enclosed in **Individual Cellophane Wrappers**.

Cape Chisel  
No. 223



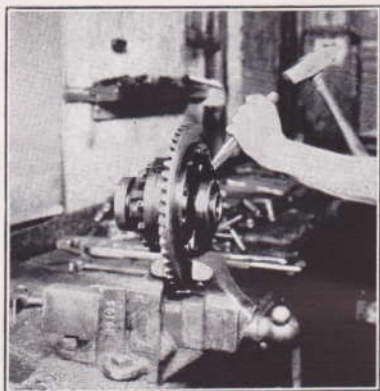
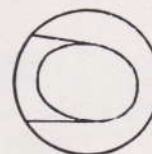
Half-Round Chisel  
No. 233



Diamond Point Chisel  
No. 243



Round Nose Chisel  
No. 253



The following list applies to each of the above chisels:

Cutting Edge, Inches	List Price, Dozen	Length, Inches	Size Stock, Inches	Approx. Wt., Dozen
$\frac{1}{8}$	\$4.20	$4\frac{1}{2}$	$\frac{5}{16}$	1 lb. 5 ozs.
$\frac{3}{16}$	4.80	5	$\frac{3}{8}$	1 lb. 14 ozs.
$\frac{1}{4}$	5.40	$6\frac{1}{2}$	$\frac{1}{2}$	3 lbs. 13 ozs.
$\frac{5}{16}$	6.00	7	$\frac{5}{8}$	5 lbs. 8 ozs.
$\frac{3}{8}$	6.60	$7\frac{1}{2}$	$\frac{5}{8}$	6 lbs. 14 ozs.
$\frac{1}{2}$	7.50	8	$\frac{3}{4}$	10 lbs. 14 ozs.
$\frac{5}{8}$	8.00	8	$\frac{3}{4}$	11 lbs. 12 ozs.
$\frac{3}{4}$	9.00	$8\frac{1}{2}$	$\frac{7}{8}$	15 lbs. 6 ozs.
$\frac{7}{8}$	12.00	9	1	24 lbs. 12 ozs.

Packed one-half dozen in a box

Each Chisel is **POWER TESTED** for proper hardness and toughness

Please order in **PACKAGE** quantities

New  
Cello-  
phane  
Wrappers



## Punches

Trip-hammer forged from our special analysis alloy steel. Each tool is hammer tested. Enclosed in Individual Cellophane Wrappers.

### Solid Punch No. 263



Point, inches...	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$
Steel, inches....	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$
Length, inches...	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	7	8
List, dozen....	\$3.30	\$3.60	\$3.90	\$4.20	\$5.00	\$6.00
Wt., lbs., doz...	$1\frac{1}{2}$	$1\frac{3}{4}$	$3\frac{1}{4}$	$3\frac{3}{4}$	$6\frac{1}{2}$	8

### Drift Punch No. 630



Point, inches.....	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$
Steel, inches.....	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$
Length, inches.....	10	10	10	10
Taper, inches.....	$5\frac{1}{4}$	$4\frac{3}{4}$	$4\frac{3}{4}$	5
List, dozen.....	\$7.00	\$7.00	\$7.00	\$8.00
Wt., lbs., doz.....	8	$8\frac{1}{2}$	9	13

### Lining-Up Punch No. 620



Point, inches.....	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{4}$
Steel, inches.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{3}{4}$
Length, inches.....	10	12	12	12	18
Taper, inches.....	7	$8\frac{1}{2}$	7	$8\frac{1}{2}$	9
List, dozen.....	\$7.00	\$8.00	\$8.00	\$10.00	\$14.00
Wt., lbs. doz.....	$4\frac{1}{2}$	$8\frac{1}{2}$	10	$13\frac{1}{2}$	21

### Pin Punch No. 2866



Point, inches	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$
Steel, inches..	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Length, inches	6	6	6	6
List, dozen..	\$5.00	\$5.00	\$5.00	\$5.00
Wt., lbs., doz.	$1\frac{3}{4}$	$1\frac{3}{4}$	2	2

### Pin Punch No. 2869



Point, inches	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$
Steel, inches..	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Length, inches	9	9	9	9
List, dozen..	\$7.00	\$7.00	\$7.00	\$7.00
Wt., lbs., doz.	4	4	$4\frac{1}{4}$	$4\frac{1}{4}$

### Center Punch No. 284



Diameter of steel, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Length, inches.....	$3\frac{1}{2}$	5	6
List, dozen.....	\$2.70	\$3.60	\$4.80
Wt., lbs., doz.....	$\frac{3}{4}$	$1\frac{3}{4}$	$3\frac{3}{4}$

### Prick Punch No. 2873



Diameter of steel, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Length, inches.....	$3\frac{1}{2}$	$5\frac{1}{2}$	6
List, dozen.....	\$2.70	\$3.60	\$4.80
Wt., lbs., doz.....	$\frac{3}{4}$	$1\frac{3}{4}$	$3\frac{1}{4}$

All punches packed one-half dozen in a box

Each Punch is HAMMER TESTED for proper hardness and toughness  
Please order in PACKAGE quantities



New  
Cello-  
phane  
Wrappers

## All-Steel Wood Chisel

No. 577

Hargrave All-Steel Wood Chisels are made for all classes of work. The design, quality of steel and temper are such that they *will not break or take a set* in cutting and prying. The handles *will stand the use of a hammer* without breaking, making them much more durable than the wood handle chisels.



Cutting Edge, Inches	List Price, Dozen	Length, Inches	Size Stock, Inches	Weight, Dozen
$\frac{1}{2}$	<b>\$11.00</b>	10	$\frac{1}{2}$	5 lbs. 4 ozs.
$\frac{3}{4}$	<b>13.00</b>	12	$\frac{5}{8}$	10 lbs.
<b>1</b>	<b>15.00</b>	12	$\frac{5}{8}$	10 lbs. 12 ozs.
<b>1<math>\frac{1}{4}</math></b>	<b>17.00</b>	12	$\frac{3}{4}$	15 lbs.

Packed one-half dozen in a box

## Wrecking Chisels



	List Price, Dozen	Cutting Edge, Inches	Length, Inches	Size Stock, Inches	Weight, Dozen
No. 582—Straight	<b>\$15.00</b>	$1\frac{1}{2}$	18	$\frac{3}{4}$	24 lbs.
No. 583—Bent	<b>16.00</b>	$1\frac{1}{2}$	18	$\frac{3}{4}$	24 lbs.

Packed in bulk

## Floor Chisel

No. 950



Our Floor Chisel has thin blade, enabling the carpenter, plumber or electrician to cut the tongue off and lift the floor boards *without marring the surface*.

It is a high-grade tool and will cut wire nails without damage.

Width Blade, Inches	List Price, Dozen	Length, Inches	Stock, Inches	Weight, Dozen
$2\frac{1}{2}$	<b>\$18.00</b>	11	$\frac{5}{8}$	12 lbs.
<b>3</b>	<b>21.00</b>	12	$\frac{5}{8}$	15 lbs.

Packed one-half dozen in a box

Each Tool is **HAMMER TESTED** for proper hardness and toughness

Please order in **PACKAGE** quantities



Trip-hammer forged from our special analysis Alloy Steel. Each tool is hammer tested.

## Tile Chisel

No. 962



Cutting Edge,  
Inch  
 $\frac{1}{4}$

List Price,  
Dozen  
**\$3.60**

Length,  
Inches  
5

Weight,  
Dozen  
12 ozs.

Packed one dozen in a box

## Plugging Chisel

(Joint Chisel)

No. 963



Cutting Edge,  
Inch  
 $\frac{3}{16}$   
 $\frac{1}{4}$

List Price,  
Dozen  
**\$7.20**  
**7.80**

Length,  
Inches  
10  
10

Stock,  
Inches  
 $\frac{1}{2}$   
 $\frac{5}{8}$

Weight,  
Dozen  
6 lbs. 3 ozs.  
9 lbs. 5 ozs.

Packed one-half dozen in a box

## Flat Brick Chisel

No. 941



Cutting Edge,  
Inches  
 $1\frac{1}{8}$

List Price,  
Dozen  
**\$9.00**

Length,  
Inches  
12

Stock,  
Inches  
 $\frac{7}{8} \times \frac{3}{8}$

Weight,  
Dozen  
12 lbs.

Packed in bulk

## Octagon Brick Chisel

No. 944



Cutting Edge,  
Inches  
**1**  
**1**  
 $1\frac{1}{4}$

List Price,  
Dozen  
**\$ 9.00**  
**12.00**  
**16.00**

Length,  
Inches  
12  
18  
24

Stock,  
Inches  
 $\frac{5}{8}$   
 $\frac{5}{8}$   
 $\frac{3}{4}$

Weight,  
Dozen  
13 lbs.  
19 lbs.  
37 lbs.

Packed in bulk

Each Chisel is HAMMER TESTED for proper hardness and toughness  
Please order in PACKAGE quantities

## Bull Points

(Stone Points)

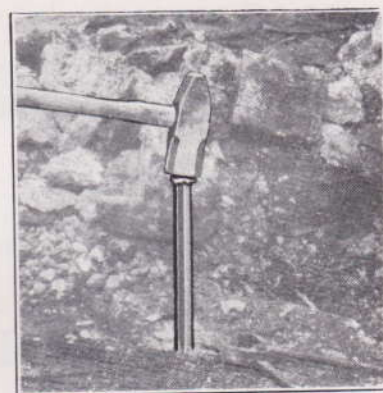
Made from our high-grade alloy chisel steel and properly tempered to give durability. They are forged under the trip hammer, not drop-forged. Each one is Power Tested.

No. 584



Size. Inches	List Price, Dozen	Weight, Dozen
$\frac{3}{4}$ x 9	\$ 7.00	12 lbs.
$\frac{3}{4}$ x 12	7.50	18 lbs.
$\frac{7}{8}$ x 12	10.00	23 lbs.
1 x 12	12.00	28 lbs.
1 x 15	14.00	36 lbs.
$\frac{7}{8}$ x 18	12.00	35 lbs.
1 x 18	15.00	45 lbs.
$1\frac{1}{8}$ x 18	21.00	57 lbs.
$1\frac{1}{4}$ x 18	23.00	77 lbs.
1 x 24	20.00	61 lbs.
$1\frac{1}{8}$ x 24	26.00	78 lbs.
$1\frac{1}{4}$ x 24	28.00	103 lbs.
$1\frac{1}{2}$ x 24	48.00	156 lbs.
$1\frac{1}{4}$ x 36	39.00	156 lbs.
$1\frac{1}{2}$ x 36	64.00	228 lbs.

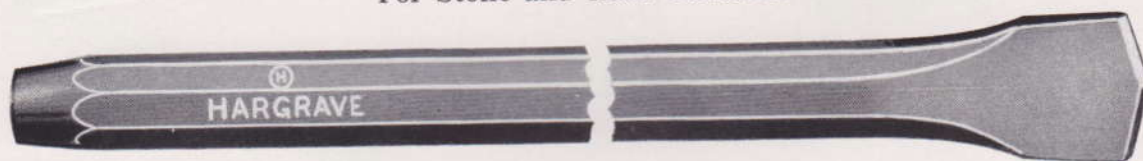
Packed in bulk



## Stone Drills

No. 870—Two-Point

For Stone and Hard Concrete



Made from special analysis alloy steel. Designed especially for drilling stone and hard concrete.

Trip-hammer forged. We do not drop-forged any of our tools.

Each Drill is tested for hardness, toughness and freedom of flaws.

Sizes not listed are not stocked

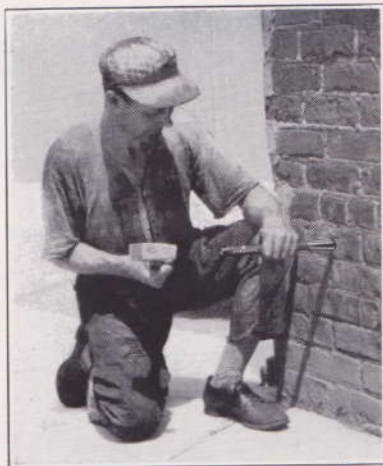
### LIST PRICES ARE AS FOLLOWS:

12-inch Length			18-inch Length		
Stone Drill, Inches	List, Dozen	Wt. Lbs. Dozen	Stone Drill, Inches	List, Dozen	Wt. Lbs. Dozen
$\frac{1}{2}$	\$10.00	4	$\frac{1}{2}$	\$12.50	7
$\frac{5}{8}$	12.00	6 $\frac{1}{2}$	$\frac{5}{8}$	15.00	9 $\frac{1}{2}$
$\frac{3}{4}$	14.00	8 $\frac{1}{4}$	$\frac{3}{4}$	17.50	12 $\frac{1}{4}$
$\frac{7}{8}$	16.00	13	$\frac{7}{8}$	20.00	19 $\frac{1}{4}$
1	18.00	18 $\frac{1}{2}$	1	22.50	27 $\frac{1}{2}$
$1\frac{1}{8}$	24.00	18 $\frac{1}{2}$	$1\frac{1}{8}$	28.00	27 $\frac{1}{2}$
$1\frac{1}{4}$	30.00	24	$1\frac{1}{4}$	35.00	35 $\frac{1}{2}$
...	...	...	$1\frac{3}{8}$	45.00	36 $\frac{1}{2}$
...	...	...	$1\frac{1}{2}$	56.00	48
...	...	...	$1\frac{3}{4}$	81.00	74 $\frac{1}{2}$



## Star Drills

### Alloy Steel



These Drills are made from our *high-grade special analysis steel*. They cut fast and give good service.

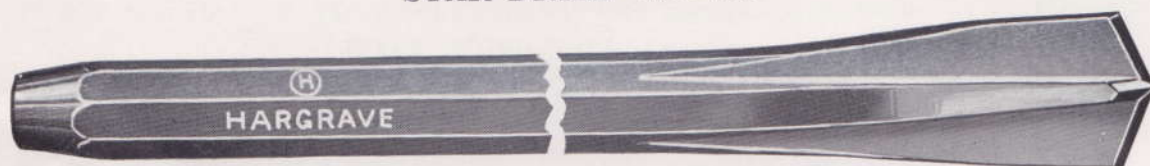
They are *forged out under the trip hammer*. (We do not drop-forg any of our tools.)

Each tool is *carefully tempered* for the work for which it is intended and *given a working test* before going into stock.

Our high standard of workmanship is maintained throughout.

8 and 12-inch lengths are packed as follows:  
 $\frac{1}{4}$  to  $\frac{3}{8}$ -inch, inclusive, one dozen in a box  
 $\frac{3}{8}$  to 1-inch, inclusive, one-half dozen in a box  
 All other sizes packed in bulk

### STAR DRILL—No. 800



Sizes not listed below are not stocked

LIST PRICES ARE AS FOLLOWS:

8-inch Length			12-inch Length			18-inch Length			24-inch Length			30-inch Length		
Star Drill, Inches	List, Dozen	Wt. Lbs. Dozen	Star Drill, Inches	List, Dozen	Wt. Lbs. Dozen	Star Drill, Inches	List, Dozen	Wt. Lbs. Dozen	Star Drill, Inches	List, Dozen	Wt. Lbs. Dozen	Star Drill, Inches	List, Dozen	Wt. Lbs. Dozen
$\frac{1}{4}$	\$8.25	$\frac{3}{4}$	$\frac{1}{4}$	\$8.50	$1\frac{1}{4}$	.....	.....	.....	.....	.....	.....	.....	.....	.....
$\frac{5}{16}$	8.25	$1\frac{1}{2}$	$\frac{5}{16}$	8.50	$2\frac{1}{4}$	.....	.....	.....	.....	.....	.....	.....	.....	.....
$\frac{3}{8}$	8.25	$2\frac{1}{4}$	$\frac{3}{8}$	8.50	$3\frac{1}{4}$	.....	.....	.....	.....	.....	.....	.....	.....	.....
$\frac{7}{16}$	8.70	$2\frac{1}{4}$	$\frac{7}{16}$	9.00	$3\frac{1}{4}$	.....	.....	.....	.....	.....	.....	.....	.....	.....
$\frac{1}{2}$	9.65	3	$\frac{1}{2}$	10.00	4	$\frac{1}{2}$	\$12.50	7	.....	.....	.....	.....	.....	.....
$\frac{5}{8}$	11.65	$4\frac{1}{4}$	$\frac{5}{8}$	12.00	$6\frac{1}{2}$	$\frac{5}{8}$	15.00	$9\frac{1}{2}$	.....	.....	.....	.....	.....	.....
$\frac{3}{4}$	13.70	$5\frac{1}{2}$	$\frac{3}{4}$	12.00	$6\frac{1}{2}$	$\frac{3}{4}$	15.00	$9\frac{1}{2}$	$\frac{3}{4}$	\$20.00	$16\frac{1}{2}$	.....	.....	.....
.....	.....	.....	$\frac{7}{8}$	14.00	$8\frac{1}{4}$	$\frac{7}{8}$	17.50	$12\frac{1}{4}$	$\frac{7}{8}$	22.50	$25\frac{1}{2}$	.....	.....	.....
.....	.....	.....	$\frac{1}{16}$	14.00	$8\frac{1}{4}$	$\frac{1}{16}$	17.50	$12\frac{1}{4}$	1	25.00	36	1	\$30.00	$45\frac{1}{2}$
.....	.....	.....	$\frac{3}{16}$	14.00	$8\frac{1}{4}$	$\frac{3}{16}$	20.00	$19\frac{1}{4}$	$1\frac{1}{4}$	40.00	$50\frac{1}{4}$	$1\frac{1}{4}$	48.00	62
.....	.....	.....	$\frac{1}{2}$	16.00	13	$\frac{1}{2}$	22.50	$27\frac{1}{2}$	$1\frac{1}{2}$	62.00	64	$1\frac{1}{2}$	72.00	81
.....	.....	.....	1	18.00	$18\frac{1}{2}$	1	28.00	$27\frac{1}{2}$	$1\frac{3}{4}$	87.00	96	$1\frac{3}{4}$	100.00	128
.....	.....	.....	$1\frac{1}{8}$	24.00	$18\frac{1}{2}$	$1\frac{1}{8}$	35.00	$35\frac{1}{2}$	2	120.00	97	2	140.00	129
.....	.....	.....	$1\frac{1}{4}$	30.00	24	$1\frac{1}{4}$	45.00	$36\frac{1}{2}$	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	$1\frac{3}{8}$	56.00	48	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	$1\frac{1}{2}$	81.00	$74\frac{1}{2}$	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	$1\frac{3}{4}$	.....	.....	.....	.....	.....	.....	.....	.....

Each Star Drill is TESTED for Hardness and Toughness

Do not confuse this Trip-hammer Forged, Tested, Alloy Steel Star Drill with the ordinary carbon steel, drop-forged Star Drill. **Hargrave Star Drills Last Longer.**

Please order in PACKAGE quantities

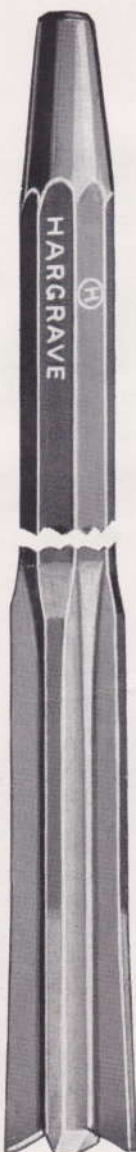
## V-Flat Star Drills for Electric and Pneumatic Hammers

(Patented)

The Hargrave "V-Flat" Star Drill cuts faster and shows less wear because the construction of the "V-Flat" Point distributes the cutting action more uniformly over the surface being drilled than any other type of point.

It is much more easily sharpened with a file or on a wheel than the four-point Star Drill.

Trip-Hammer Forged from special analysis steel and properly tempered. Individually tested for hardness and toughness before going into stock, insuring satisfactory service.



(Patented)

Furnished in the following sizes to fit Hargrave Chucks, also chucks for Black & Decker and Van Dorn, Syntron and Millers Falls Electric Hammers.

For other makes of hammers it is necessary to use them with the Hargrave Chucks—listed on opposite page.

In ordering, specify by number which taper is required on each size of drill.

### LIST PRICE, EACH

Size Drill, Inches	5-inch	8-inch	12-inch	18-inch	24-inch	Specify Hargrave Taper [Number in ordering.]
$\frac{1}{4}$ ....	\$0.90	\$0.90				Furnished with either No. 5 Taper, which fits Black & Decker and Van Dorn Chucks, or No. 10 Taper, which fits Syntron and Millers Falls Chucks.
$\frac{5}{16}$ ....	.90	.90				
$\frac{3}{8}$ ....	.90	.90				
$\frac{7}{16}$ ....	.95	.95				
$\frac{1}{2}$ ....	.95	.95	\$1.05			
$\frac{9}{16}$ .....		1.05	1.15	\$1.25		Furnished with either No. 6 Taper, which fits Black & Decker and Van Dorn Chucks, or No. 11 Taper, which fits Syntron and Millers Falls Chucks.
$\frac{5}{8}$ .....		1.05	1.15	1.25		
$\frac{11}{16}$ .....		1.25	1.40	1.50		
$\frac{3}{4}$ .....		1.25	1.40	1.50		
$\frac{7}{8}$ .....		1.60	1.70	1.80		
1 .....		1.90	2.10	2.30		Furnished with No. 12 Taper, which fits Black & Decker and Van Dorn Chucks, also Syntron and Millers Falls Chucks.
$1\frac{1}{8}$ .....			2.40	2.70		
$1\frac{1}{4}$ .....			2.80	3.20		
$1\frac{3}{8}$ .....			3.20	3.70	\$4.20	
$1\frac{1}{2}$ .....			3.70	4.30	4.90	

Packed in bulk

Star Drills for hand use are listed on page 27



## HARGRAVE Chucks for Electric and Pneumatic Hammers

Made of alloy steel, heat treated; light but strong. No excess weight to absorb hammer blow.

This **Chuck** or **Adapter** can be furnished with shank to fit any standard make of Electric or Pneumatic Hammer and with taper tool socket to take Hargrave "V-Flat" Star Drills. The vibration-proof handle affords ease of operation.

The use of **Hargrave Chucks** eliminates the necessity of carrying duplicate stocks of Hammer Tools for various hammers.

No. 120

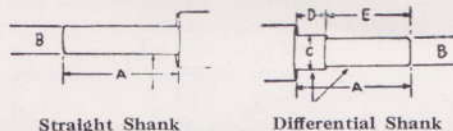


No. 120—HARGRAVE Chuck (Adapter) with handle. List, each.....\$5.60

1 in a box; weight, 1 1/4 lbs.

In ordering for Electric Hammers, specify **Make** and **Size** of hammer. Also give our number for **Taper** which you wish the Taper Tool Socket to take. (See listing of Hargrave Taper numbers on opposite page.)

When ordering for Pneumatic Hammer it is necessary to specify whether **straight** or **differential** shank is required and give **exact dimensions of shank**. Also give our number for the **Taper** which you wish the Tool Socket to take. (See listing of Hargrave Taper numbers on opposite page.)



The **Hargrave Improved "V-Flat" Star Drill** is economical to use for the following reasons:

**Cuts Faster**—Five inches per minute in seasoned concrete.

**Wears Longer**—Fifty to eighty inches of holes between grinds.

**Drills Deeper**—No manual clearing of holes needed for greater depth.

**Drills Holes Same Size as Drill**—Drills with smaller number of flutes and different point must be sharpened very accurately or they drill holes larger than the diameter of the drill.

**Sharpens Easily**—A regular grinding wheel is all that is needed.

**Lowers the Cost Per Hole**—Tests have shown a reduction of 50% in cost of holes drilled.



(Patented)

## Brace Wrenches

### Standard Square and Hexagon

These wrenches are made of malleable, *hardened so as to give the greatest durability together with maximum strength.*

Each size is accurately drifted to United States standard nut sizes. A shoulder prevents the nut working far up into the wrench and the open shank prevents clogging with dirt and also enables the user to handle the wrench in places where a brace will not go.

\*Size opening given below for both Square and Hexagon Wrenches is measurement from flat to flat and is stamped on each wrench.

Please order by number.



### Square Opening Wrenches

	Number	List. Dozen	*Size Opening, Inches	Machine Bolt (Nut)	Machine Bolt and Lag Screw (Head)	tove Bolt (Nut)	Machine Screw (Nut)
One dozen in a box	151	\$ 3.50	5/16 will fit	1/8	3/16	1/8	6
	152	3.50	3/8 will fit	3/16	1/4	5/32 & 3/16	8 & 10
	153	4.00	7/16 will fit			7/32	12
	154	4.50	1/2 will fit	1/4	5/16	1/4	1/4
	155	5.00	19/32 will fit	5/16	3/8	5/16	5/16
	156	6.00	5/8 will fit			3/8	3/8
One-half dozen in a box	1560	6.50	11/16 will fit	3/8	7/16		
	157	7.00	25/32 will fit	7/16	1/2		
	158	7.50	7/8 will fit	1/2	9/16		
	159	8.00	1 will fit	9/16	5/8		
	160	9.00	1-1/8 will fit	5/8	3/4		
	161	10.00	1-1/4 will fit	3/4			
	162	6.00	7/16 x 7 long				
	163	7.00	9/16 x 7 long				

Ordering by number will eliminate all confusion and insure the proper size being shipped.

### Hexagon Opening Wrenches

	Number	List. Dozen	*Size Opening, Inches	Machine Bolt (Nut)	Machine Bolt (Head)	Cap Screw (Head and Nut)	Machine Screw (Nut)
One dozen in a box	165	\$ 3.50	5/16 will fit	1/8	3/16		6
	166	3.50	3/8 will fit	3/16	1/4	3/16	8 & 10
	167	4.00	7/16 will fit			1/4	12
	168	4.50	1/2 will fit	1/4	5/16	5/16	1/4
	169	5.00	19/32 will fit	5/16	3/8	3/8	5/16
	170	6.00	5/8 will fit			7/16	3/8
One-half dozen in a box	171	6.50	11/16 will fit	3/8	7/16		
	172	7.00	25/32 will fit	7/16	1/2	1/2	
	173	7.50	7/8 will fit	1/2	9/16	9/16 & 5/8	
	1731	8.00	1 will fit	9/16	5/8		
	1732	9.00	1-1/8 will fit	5/8	3/4		
	1733	10.00	1-1/4 will fit	3/4			

Ordering by number will eliminate all confusion and insure the proper size being shipped.

Sizes of packages range from 6 1/8 x 4 1/4 x 1 1/4 inches for the smallest size wrenches to 8 3/4 x 4 1/4 x 2 1/2 inches for the largest size. Complete information as to *size nut, bolt head, cap screw and lag screw* which each size wrench will fit, is given above. Prices for special shanks or sizes on application.

Please order in PACKAGE quantities



## Brace Wrench Assortment

No. 150



No. 150 Brace Wrench Assortment, consisting of 37 wrenches as listed below and attractive display board 15 inches high and 11½ inches wide (enameled metal, mounted on a 5/8-inch board), packed in individual carton. Weight, 12½ lbs.

List, each.....\$15.70

Can be hung from the top or side by using screw hooks and screw eyes or hinges.

Quantities of the different sizes have been carefully worked out and slow-moving sizes eliminated.

Each Assortment is packed in individual carton. For convenience in reordering for stock, smaller sizes are packed one dozen, and larger sizes one-half dozen, in a box. List prices per dozen are given below.

### No. 150 Assortment includes the following wrenches

Quantity	Square	List, Dozen	Quantity	Hexagon	List, Dozen
4—No. 152—	3/8	\$3.50	2—No. 166—	3/8	\$3.50
3—No. 153—	7/16	4.00	2—No. 167—	7/16	4.00
4—No. 154—	1/2	4.50	3—No. 168—	1/2	4.50
3—No. 155—	19/32	5.00	2—No. 169—	19/32	5.00
2—No. 156—	5/8	6.00	2—No. 170—	5/8	6.00
3—No. 1560—	11/16	6.50	3—No. 171—	11/16	6.50
2—No. 157—	25/32	7.00	2—No. 172—	25/32	7.00

For larger and smaller sizes, refer to page 30

## Bit Wrench

No. 149

This Bit Wrench has two sockets instead of one. They fit standard bit brace taper square shanks. The center socket has a pointed screw which holds the bit perfectly rigid. The other socket is used to give double leverage when desired or for close corner work with drill, reamer, screw driver or brace wrench. Very useful; nicely enameled.

No. 149—Price, dozen.....\$6.00

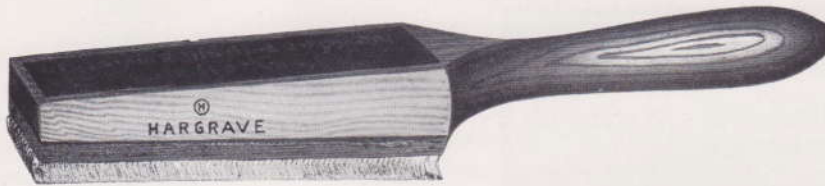
Weight, dozen, 4 lbs. Packed one dozen in a box

Please order in PACKAGE quantities



## File Cleaner

No. 364



The teeth are of tempered steel wire and will not turn over by coming in contact with file. Handles are hardwood, neatly finished.

No. 364—Price, dozen.....	\$6.00
No. 3641—Scorers, if desired. Extra, dozen.....	1.50

Weight, dozen, 3 lbs. Packed one dozen in a box.

Please order in PACKAGE quantities

## Circle Metal Cutter

No. 1406

Cuts circular holes in sheet metal, wood, fibre, etc. Useful for electricians, auto mechanics, sheet metal workers, etc. Will cut circles from  $1\frac{1}{4}$  to 6 inches, when used in brace.

The knives are forged from one solid piece of tool steel, carefully tempered. The shank is made of forged tool steel and the body of the tool is heavy malleable.

Furnished with round or taper shanks for use in machine, if desired. Maximum capacity for machine use 4-inch diameter.

Care should be taken that the safe cutting speed for carbon steel (about 20 feet per minute) is not exceeded, unless high-speed steel knives are used.



List, Each

No. 1406—Circle Metal Cutter (with Bit Stock Shank and Carbon Steel Knives) .....	\$3.50
No. 1406-HSR—Circle Metal Cutter (with $\frac{1}{2}$ -inch Round Shank and High-Speed Steel Knives). Maximum capacity, 4 inches.....	5.25
No. 1406-HST—Circle Metal Cutter (with No. 1 Morse Taper Shank and High-Speed Steel Knives). Maximum capacity, 4 inches.....	5.50
No. 1407—Knives only, Carbon Steel.....	1.00
No. 1408—Knives only, High-Speed Steel.....	1.50
No. 1409—Center Drill only, Carbon Steel.....	.75
No. 1410—Adjusting Screws only.....	.25

Packed one in a box. Weight of Package, 1 lb.



## No. 366

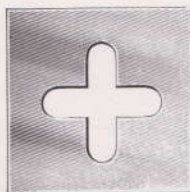
### File Cleaner (*with the Chip Plow*)

PATENT PENDING



This is a new and very effective way to clean a file of soft metal chips—lead, copper, aluminum, and soft steel.

The plate or scraper is fastened to the handle of a file cleaner of our regular high standard. The four edges may be used at will, or the plate may be set in the disengaged position and only the regular file card may be used.

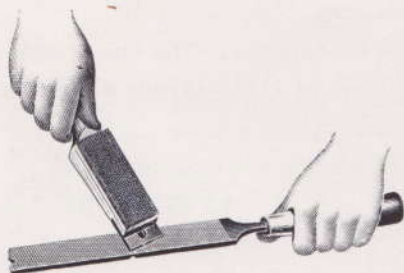


The plate or scraper is used by striking one edge on the file to be cleaned to impress the tooth pattern on

its edge. You then push the scraper parallel to the file grooves. It plows out the embedded chips and dirt. When a file of different tooth spacing is to be cleaned, a new edge of the scraper must be used.

Plates last long, and when worn may be replaced at low cost. When non-metallic dirt is to be removed, the file card with its tempered steel wire is used.

### No. 366—File Cleaner



Per dozen, complete—List price.....\$9.00

Extra Plates No. 366-P—Dozen..... 1.00

Extra Thumb Nut No. 366-N—Dozen..... .75

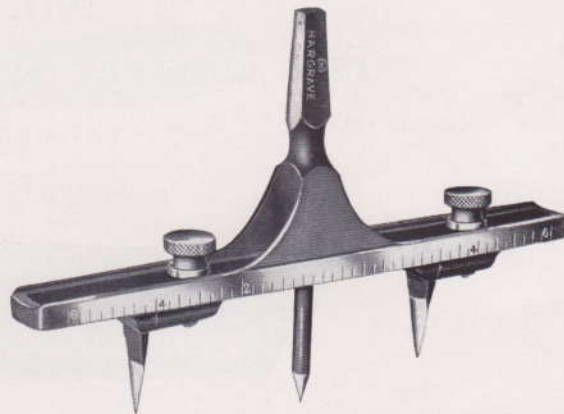
Standard Package— $\frac{1}{2}$  Dozen

Weight, 1 lb. 14 oz.

## Washer Cutters

### No. 407—6-inch

Used for cutting gaskets out of leather, paper, rubber, sheet lead or thin wood, cutting both inner and outer circle at the same time and adapted to any ordinary brace. The body of tool is malleable iron; pin is of steel; blades are of tool steel, properly ground and tempered. Polished and japanned. The adjustment is made by knurled thumbscrews.

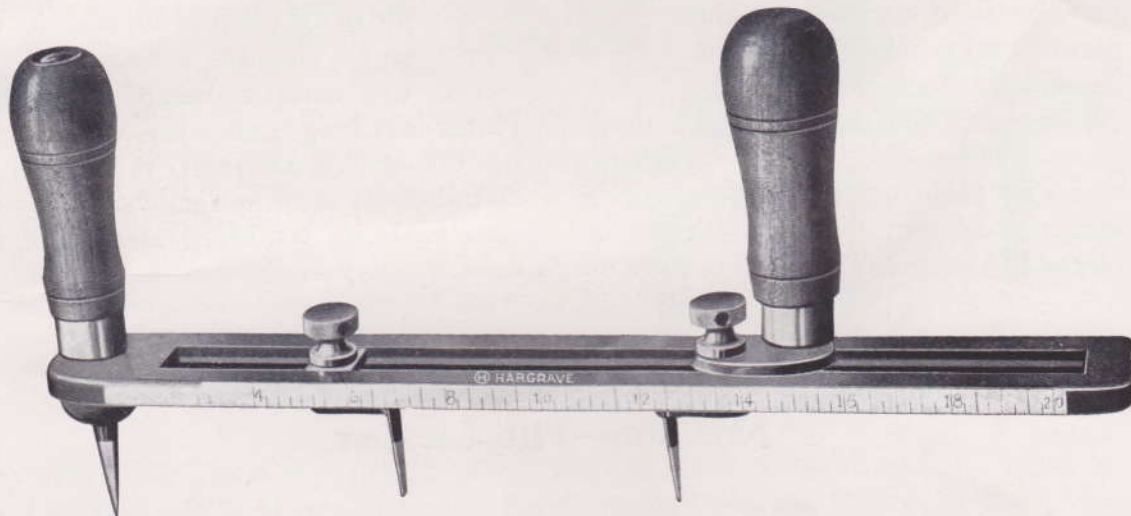


	List Price, Each	Weight of Package
No. 407—6-inch, with gauge.....	\$2.25	1 lb. 10 oz.
No. 409—Knives only.....	.75	
No. 410—Screws only.....	.25	

Packed one-sixth dozen in a box

Please order in PACKAGE quantities

### No. 411—20-inch



This tool is adapted to cutting gaskets from 4 to 20 inches in diameter. The knives are of tool steel, well tempered, and are adjusted by knurled thumbscrews. The center pin is also of steel. The cutter is japanned and polished.

	List Price, Each	Weight of Package
No. 411—20-inch, with gauge.....	\$2.75	1 lb. 5 oz.
No. 409—Knives only.....	.75	
No. 410—Screws only.....	.25	

Packed one in a box



## Folding Steel Saw Vises

(Patented)

No. 20



All steel. No rubber to rot. Grips saw tight at two places. No chatter. Adjusts instantly. Holds any saw up to 14-gauge. Filing space,  $10\frac{1}{2}$  inches long by  $\frac{7}{8}$ -inch high. Folds compactly into space  $12\frac{1}{2} \times 2\frac{3}{4} \times 2\frac{1}{2}$  inches. Frame enameled red and bright parts plated.

Clamps to bench or board from  $\frac{3}{4}$ -inch thick, or can be attached permanently by screw.

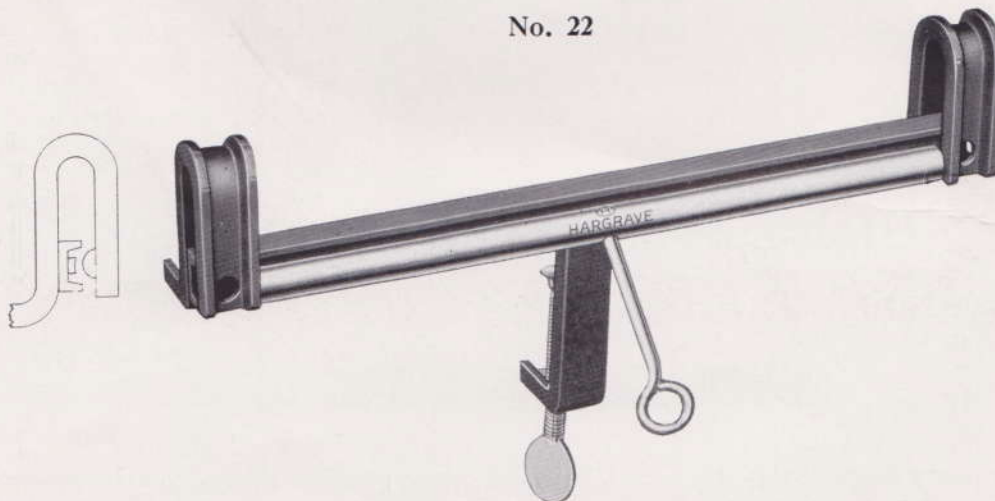
Any standard saw set can be used with this vise.

Number	List Price, per Dozen	Weight of Package	Size of Package, Inches
20	\$18.00	2 lbs. 6 ozs.	$12\frac{3}{4} \times 3 \times 2\frac{3}{4}$

Packed one in a box. One dozen in a carton

Lower  
Price

No. 22



This vise holds the saw between a channel section and the eccentric rod, eliminating chatter without the use of a rubber cushion. Clamps on any bench or board.

Any standard saw set can be used with this vise. Filing space,  $10\frac{1}{2}$  inches long. Finished in red enamel, with bright parts plated.

Number	List Price, per Dozen	Weight of Package	Size of Package, Inches
22	\$15.00	4 lbs. 8 ozs.	$12\frac{3}{4} \times 3 \times 2\frac{3}{4}$

Packed two in a box. Two dozen in a carton

Lower  
Price

## Bell Hangers' and Electricians' Drill

No. 13



This drill is made particularly for bell hangers, car builders, electricians, telephone and telegraph workers. It will go through a nail or screw, through plastering or brick walls, without injury to the bit. It is readily sharpened on an emery wheel or grindstone and is most durable and satisfactory. If you have experienced trouble with breaking of drills, this drill may overcome your difficulty. We stock the following lengths and sizes:

### Lengths

Size, Inches	12-inch List Price, Dozen	18-inch List Price, Dozen	24-inch List Price, Dozen
3/16	\$ 7.50	\$10.00	\$12.50
1/4	8.00	10.50	13.00
5/16	8.75	11.00	13.50
3/8	9.50	12.00	14.50
7/16	10.50	13.00	15.50
1/2	12.00	14.50	17.00
9/16	13.50	16.00	18.50
5/8	15.25	17.75	20.25
11/16	17.00	19.50	22.00
3/4	19.00	21.50	24.00

Packed one-half dozen in a box

Please order in PACKAGE quantities

## High-Speed Straight Shank Drill

No. 14



For boring in wood, plastering, etc. Twist is 4" long. Shank is relieved so that it will follow through the hole without binding.

### Lengths

Size, Inches	6-inch List Price, Each	9-inch List Price, Each	12-inch List Price, Each	18-inch List Price, Each
1/4	\$2.00	\$2.20	\$2.35	\$2.55
5/16	2.55	2.80	3.05	3.70
3/8	3.10	3.50	3.80	5.00

New  
Sizes